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Con tu apoyo, nuestros afiliados tienen acceso a servicios y disfrutan de programas diseñados para su bienestar. Eres el principal enlace con todos ellos y al igual que nosotros, te esmeras porque recibamos la atención personal que necesitan, juntos, hacemos que cada detalle cuente por la salud de nuestra gente.
President’s Message

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Dr. Luis A. Román Irizarry
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Dr. Luis J. Lugo Vélez
Dr. Rafael Rodríguez Mercado

The Health Systems in the United States and Puerto Rico will transform itself through fostering Health Information Technology (HIT), which the Federal Government is implementing. To accomplish this endeavor the Electronic Health Records (EHR) need to be implemented. This system will provide for medical services patient oriented, well-coordinated and focused on prevention.

Right now we are close to the deadline for physicians to use Electronic Health Records (EHR) if they participate of Medicare and/or Medicaid. For the past immediate years the Federal Government has been promoting the EHR’s use and awarded incentives to stimulate all physicians involved to become knowledgeable on the subject and to acquire adequate meaningful use. After the deadline, Medicare will penalize providers not using EHR appropriately.

To make a wise decision to select which EHR is best suitable for you, it is imperative that you know which criteria apply to your specialty, your needs and your responsibilities to guarantee privacy and secured information about your patients. You must know that Electronic Health Records are above Electronic Medical Records. The EHR System allows you to interchange, integrate and process patient’s information with different providers caring for the patient with the same privacy, accuracy and information protection of regular records in compliance with the Health Insurance Portability and Accountability Act, HIPAA.

Given that we as physicians are the ultimate responsible for our patient’s health, it is imperative we assume leadership on the matter and give our patient’s the opportunity to benefit of participating of the EHR System. The Puerto Rico Medical Association has much expertise on the matter. It will be our pleasure to give any and all of you the assistance you might still need on the subject.

Do not forget, the EHR is here to stay. It is indispensable in the 21st Century Medical Practice. There is no turning back!
Cardiovascular Risk factors in Cuban women undergoing Heart Catheterization: An 11- year retrospective study.

Dagmar F. Hernandez Suarez, MD*; Ronald Aroche Aportela, MD¥

*Department of Internal Medicine, School of Medicine, University of Puerto Rico School of Medicine.
¥Universidad de Ciencias Médicas de La Habana.

Introduction: Cardiovascular disease (CVD) is the leading cause of morbidity and mortality in Cuba. Although morbidity risk is comparable between males and females, in absolute numbers more females die of CVD than males. Different studies have shown that women receive less cardiac monitoring, left heart catheterization, bypass surgery, hospitalizations and pay fewer visits to the cardiologist. Very few studies have been conducted in Cuba approaching gender disparities in health care.

Aim: To determine cardiovascular risk factors in females undergoing heart catheterization in Cuba.

Methods: A Case-Control study was conducted in 1318 females undergoing a heart catheterization at the hospital of “CIMEQ”, Havana, Cuba, from August 1997 to September 2008. Descriptive statistics were used for data analysis through SPSS 20.0 version. The chi-square test was utilized to establish the relationship between variables and Odds Ratio to determine the degree of these relationships. (p<0.05)

Results: Several cardiovascular risk factors were chosen to be studied in this population including: arterial hypertension (67.8%), smoking (34.7%), dyslipidemia (25.3%), diabetes mellitus (16.7%), and being female ≥50 years old (72.3%). A 67.8% (893 women) of the study population was diagnosed with significant coronary artery disease (CAD). Those with diabetes mellitus had the highest risk of developing CAD (OR=3.07;CI: 2.13-4.41), followed by being ≥50 years old (OR=1.51;CI: 1.18-1.93). The left circumflex artery was most commonly affected (50.7%), whereas the left anterior descending artery was the least obstructed (33.5%). Furthermore, 11.0% and 35.2% of women were diagnosed with left main coronary artery disease and multi-vessel disease respectively. The majority of subjects had more than one of these aforementioned risk factors.

Conclusions: Age ≥50 years, arterial hypertension, diabetes mellitus and smoking all increase the risk of
developing coronary artery disease in Cuban women. There may be an association between being female and having left circumflex coronary artery disease.

Key words: Cuba, women, Cardiovascular Risk Factors, Heart Catheterization.

Early outcomes and predictors mortality in coacervation of the aorta repair.

C. Ocasio-Rodriguez M.D., E. Carrion M.D.
University of Puerto Rico-School of Medicine and Cardiovascular Center of Puerto Rico and the Caribbean.

Objective: Aortic coarctation surgical repairs have been taking place in Puerto Rico since 1985. However, data regarding the outcomes of this population is scarce. In Puerto Rico, the annual prevalence of coarctation of the aorta, reported by the Department of Health from 2003-2010, was 3.4±10.000 newborn cases. We aim to describe early outcomes of surgically repaired aortic coarctation performed at the Cardiovascular Center of Puerto Rico and the Caribbean, over the last 5 years.

Methods: We reviewed charts from children (0 month-18 years) with a diagnosis of coarctation of the aorta treated at the Cardiovascular Center of Puerto Rico and the Caribbean from 2008-2013. Patients were identified using 747.10 ICD9 code. Given that the outcome may vary by age, patients were divided into three groups: <1 month old, 1-6 month old, and >6 month old up to 18 years old. Adverse outcomes variables included seizures, cerebral infarction/hemorrhages, sepsis, recurrent laryngeal nerve paresis, pulmonary hypertensive crisis and death. Other variables evaluated included sociodemographics (sex, age), anthropometrics (weight), RACHS, surgical procedure performed (Extended end-to-end, end to end or end to side anastomosis, patch repair, subclavian flap repair), aortic clamp time, length of stay in the CICU, days on mechanical ventilation, surgical complications, PRISM III, anti-hypertensive medication use and echocardiography gradients. Data analysis was performed using frequency, means, median, and range. The study was approved by the IRB.

Results: Data from the first 7 patients included in the study (expected n=300) showed a distribution of 4 males and 3 females with ages distribution: 1 patient <30days, 3 patients 31d-6months and 3 patients >6months. Average weight was 9.2 Kg (SD 9.2). End-to-End anastomosis was used in all patients. Length of stay was <10 days (n=4) and >10 days (n=3). Length of mechanical ventilation <24hr (n=3) and >24hrs (n=4). RACHS 1 (n=6) and RACHS 2 (n=1). Other outcome variables; seizures (n=0), cerebral infarction/hemorrhages (n=1), sepsis (n=1), recurrent laryngeal nerve paresis (n=0), pulmonary hypertensive crisis (n=1), and death (n=0)

Conclusion: Since collection of data is still in process, the Puerto Rican population and outcomes of coacervation repaired is not adequately represented to draw conclusions. Further collection of data will follow to describe and compare the Puerto Rican patients post coarctation repair with patients from other centers.

Pre-discharge B-Type Natriuretic Peptide values evaluation for Identifying Patients at High Risk of Re-Admission of decompensated heart failure in patients admitted in general ward.

Tamid A. Turbay MD, PGY 2, Milton Carrero, MD, FACP

Introduction: Heart failure (HF) is a major and growing public health problem developed countries with a prevalence of about 0.4–2.2%. Particularly patients admitted for acute decompensated HF (ADHF) have high morbidity and mortality rates, most conspicuously in the first months after discharge. Recent studies have focused on the issue of early re-hospitalization (within 30 days from discharge), which occurs in nearly one-third of patients admitted with HF. The identification of patients at high risk of early re-admission is important, as individual follow-up programs may reduce their likelihood of early decompensation.

Assim: The relationship between BNP measured during the admission of an ADHF episode and hospital readmission for AHF, adjusting for age and gender.

Methods: The study “Observational” retrospectively included 45 patients consecutively admitted to the General Ward department of our hospital with a diagnosis of ADHF between Jan 1, 2013 and Oct 31, 2014. Criteria for inclusion were exacerbation of previously documented HF or new onset of HF in the admission primary diagnosis and patients with BNP measured at the time of admission and/or at discharge. The 2 criterions for exclusion were, the presence of severe non-cardiac illness that could influence short-term prognosis, and patients with On-Dialysis, as were patients who were readmitted for AHF, adjusting for age and gender.

Aim: Assess the relationship between BNP measured during the admission of an ADHF episode and hospital readmission for CHF, irrespective of age and gender. These findings may be of relevance in the creation and implementation of disease management programs for high risk CHF patients and may represents a good tool for identification of those patients with an elevated probability to have new admission due to CHF after an episode of ADCHF.

Fear Renewal Response and its Possible Implications: Healthy vs. Anxious Males

Garcia-Vassallo G, Dieppa-Pere LM, Martinez KG

Psychiatry Department, University of Puerto Rico Medical Sciences Campus

Introduction: Evidence suggests that people with anxiety disorders show altered fear learning. Recent studies have taken an interest in fear renewal and its implications in the treatment of anxiety disorders. We set out to compare Skin Conduc tance Responses (SCR) of healthy males with those of anxious males during experimental fear learning focusing on renewal fear response.

Methods: 44 Puerto Rican subjects were evaluated using the Structured Clinical Interview for DSM Disorders resulting in 20 healthy adults and 24 with anxiety psychopathology. Subjects were later trained in an established fear conditioning and extinction paradigm (Midal, et al. 2005). Difference in SCR was assessed with repeated measures ANOVAs for each phase of the training paradigm. The following were also evaluated: age, chosen shock level, education level and skin conductance level (SCL).

Results: Healthy males were found to have higher renewal response in comparison to anxious males (F= 8.055, p= 0.0069) in CS+. The percent fear renewal was also higher in healthy males (Avg 88%) vs. anxious males (Avg 41%) (t=2.018) (p=0.0004). Baseline skin conductance levels were similar for both groups (t=2.023) (p=0.119). Anxious males chose lower shock levels than normal males (t=2.023) (p=0.0036) a finding typical of anxious subjects. On average healthy males were younger than anxious males (t=2.018) (p=0.0034) and had comparable years of schooling (t=2.018) (p=0.829).

Conclusions: In comparison to anxious males, healthy males showed robust fear renewal response. Decreased renewal of fear could reflect an inability to use contextual cues to predict danger or safety, in ambiguous situations, leading to overgeneralization, a characteristic of some anxiety disorders (Lissek, 2010). In addition, a recent study found how stress abolishes the renewal effect at the electrophysical level (Merz, 2010). Anxiety subjects when exposed to the danger context may exhibit a heightened stress response, which may in turn interfere with the retrieval of the original fear memory. These are important implications when considering treatment of anxiety patients.

Clinical and epidemiologic profile of patients hospitalized with heart failure in Puerto Rico, 2007 - 2011

Sulimar Rodriguez, MD, José A. Colón, MD, Estefania Quiroz, BA, Neysha Sánchez, MD, Melissa Ruiz, MD, Mariel Lopez, MD, Angel Penafiel, MPH, Marisel Ariztay, MS, Enid J. Garcia-Rivera, MD, MPH.
University of Puerto Rico School of Medicine, Medical Sciences Campus, San Juan, Puerto Rico; 1Endowed Health Services Research Center, School of Medicine, University of Puerto Rico Medical Sciences Campus, San Juan, Puerto Rico.

Background/Objective: There are very limited data describing the epidemiology of congestive heart failure (CHF) in minority populations. The aim of this study is to describe the population hospitalized for CHF in the island of Puerto Rico.

Methods: This secondary analysis was based on data from the PR Cardiovascular Surveillance Study. Trained medical personnel obtained information from the medical records of all patients admitted with a diagnosis of Heart Failure (ICD-9: 428) at fifteen hospitals in Puerto Rico, during years 2007, 2009 and 2011. Continuous data were coded into a dichotomous death registry. Categorical variables were compared with frequencies and percentages. For all tests a p value <0.05 was considered statistically significant.

Results: The mean age of the 3,314 patients hospitalized with CHF was 70.4 years; 53% were male. 19% were subscribed to the Government Health Insurance Plan. Principal comorbidities included hypertension (88%), DM-II (59.7%) and hyperlipidemia (28%). Recurrent disease occurred in 65.7%. The main admission symptoms were dyspnea (92.8%), fatigue (60.3%) and orthopnea (35.8%). Echocardiography was performed in 50.1%, of which 30.4% had an EF<30%. Beta-blockers were prescribed in 67% in-hospital and in 57.3% at time of discharge; ACE-1s also prescribed in 61% and 44.6%, respectively. Inpatient mortality was significantly higher in women than men (6.7% vs. 4.9% respectively, p<0.05).

Conclusion: A descriptive profile of the population in Puerto Rico admitted with CHF helps us to better understand factors associated with increased morbidity and mortality and provides preliminary data for the development of future studies tailored to the specific needs of this community.

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Isolation, purification and detection of further cleavage of s80 ICD fragments of Her-4 in CCHM osteosarcoma cells.

Bryan Velez-Lopez, BS; 3Dennis P Hughes, Md, PhD; 2Yi Zhang, PhD; 5Yanwen Yang, BS; 2Rocio Rivera-Valentin, BS; and 4Laura Nelson, PhD.

Erb-4 (Her4) has shown a cleave that produce a 80kDA intracellular fragment that is converted to s80 ICD fragment found in cytosol. The goals on this research are to study the expression of the whole protein in four different isoforms and the possible cleavage of the cytoplasmic domain, including the growth behavior and cytotoxicity.

For the different assays, a cell line of osteosarcoma cell identified as CCHM-OS has been used to overexpress each of the following different isoform of Her-4: JMA – CYT1, JMA – CYT1, JMA – CYT2, JMB – CYT1, JMB – CYT2. TPA and EGF were used to treat the cells and observe the possible further cleavages of Her-4. Using the IP technique, each one of the Her-4 isoform will be isolated and purified independently. One of the experiments is to evaluate if the observation is fulfilled of a useful IP protocol involving the verification of antibodies specificity for Her-4-Flag overexpression. The last step was the Western Immunoblotting (WB) of the isolated proteins and analysis.

The results show 80 kDa band in the four Her-4 isoforms. Isoform JMB-CYT1 and JMB-CYT2 present a unique double band pattern close to 52 kDa and 38kDa. Bands around 40 kDa, associated with further cleave of Her-4 has been identified as artifacts of the immunoblotting process. It has been confirmed in both trial of cell treatment (TPA and EGF) and using different antibodies in the IP and immunoblotting process, as well. The process of tissue culture and protein extraction reveals a pattern of proliferation, growth and protein expression characteristic of each isoform pair.

For future work is planned to continue the proliferation assay as well use common chemotherapy drugs to test their activity. An important next step will be the identification of the structure of 80kDa band and possible mechanism that include the peculiar patterns 52kDa and 38kDa.

Split-dose Cisplatin as an alternative to every 3-week dosing when using Gemcitabine/Cisplatin to treat advanced urothelial cancer

Cinthia M. Gonzalez, BS 1, 3Emmet Jordan, MD 1, Emily C. Zabor, MS 3, Irina Ostrovnya PhD 2, Ashley Repozzi, BS 1, Brooke Kania, BS, Gopa Iyer, MD 1, Dean F Bajorin, MD 1, Richard M. Bambury, MB 1, and Jonathan E. Rosenberg, MD 3

The incidence of Multi-drug Resistant (MDR) Gram-negative bacterial infections has risen and there are few new antibiotics in development. Older agents such as Polymyxin B have had to be reevaluated, for infections...

Use of Polymyxin B for Gram negative Multidrug resistant bacteria in the University District Hospital Intensive Care Unit

Rafael de León-Borrás, MD, Angel Laurenzo-Cuadrado, MD, Angel Mayor-Becona, MD, Eustén DelPilar-Morales, MD, María Santa-Pérez, MD, Carlos Sánchez-Sergentón, MD

University of Puerto Rico Internal Medicine Residency Program
Mycoplasma pneumonia; the cause of an obscure cholestatic hepatitis

Tirado Rafael; Dueno, Maria; Toro, Doris H.

VA Caribbean Healthcare System, San Juan, PR.

Mycoplasma pneumonia is one of the most common pathogens affecting the respiratory system. Extra-pulmonary manifestations including the cardiovascular, hematological, neurological, psychiatric, and gastrointestinal systems are well described. However, the presentation as a hepatitis with cholestasis has been rarely reported. We review the literature. Being a rare condition, the exact pathogenesis of this manifestation is not well understood. We present a case of M. pneumonia hepatitis with cholestasis caused by hematogenous invasion. The patient was a 32-year-old Puerto Rican man who presented to our emergency department with fever, malaise, arthralgias, anorexia and dark-colored urine. He denied sick contacts, recent travel, alcohol or drug abuse. On physical exam he was febrile, with generalized jaundice and a truncal macular rash. Upon auscultation there were bibasilar ronchi; the liver was palpable and tender. Laboratory studies revealed significant liver enzymes elevation and significant eosinophilia. He was empirically treated with Levofloxacin; completing 28 days of therapy. He responded very well to therapy with complete resolution of jaundice and normalization of liver enzymes. To the best of our knowledge, this is the second case reporting Mycoplasma pneumonia hepatitis with lung involvement in the adult. Furthermore, our patient’s presentation included a macular rash, which was not present in the previous case report. Having a positive serology for M. pneumonia in the absence of all common causes of acute hepatitis makes our diagnosis very likely. The rapid improvement after proper antibiotic therapy also supports our diagnostic impression.

Prevalence of Depression in Patients with End Stage Renal Disease on Hemodialysis at the Western Area of Puerto Rico.

Sherryl D. Mitchell Hernandez, M.D., ACP Associate; Milton Carrero, M.D., FACP

Prevalence and incidence of depression are significantly increased in patients with end stage kidney disease (ESRD) undergoing dialysis. There is a growing body of evidence that depression is a risk factor for increased mortality and morbidity. ESRD patients have a higher prevalence of depression than the general population. It was the purpose of this study to determine the prevalence of depression among patients treated with hemodialysis.

Methods: This is a cross-sectional study with a sample of 94 hemodialysis patients selected from 3 dialysis centers in the West area of Puerto Rico. The Beck Depression Inventory (BDI-II) is considered to be the standard instrument for assessing symptoms of depression and screening for clinical depression. We used this scale of 21 short answer questions to assess patient mood.

INTRODUCTION: Silicon oil (SO) injection in conjunction with pars plana vitrectomy (PPV) is useful in the management of complex retinal detachments. However, several complications have been associated with the use of SO as an endotamponade. Intracocular pressure (IOP) elevation is the most commonly reported complication of SO injection in aphakic and pseudophakic eyes, it may range from mild and transient to severe pressure spikes resulting in loss of vision. There are factor that can be modified to decrease the morbidity with these intracocular pressure spikes. The present study was designed to describe a novel surgical technique associated with decreased risk of IOP spikes.

METHODS: Retrospective review between January/2013 and January/2014, 20 eyes of 18 patients with complex retinal detachment that underwent PPV with SO injection. Descriptive analysis was done. Differences between pre- and postoperative IOPs measurements were compared with the Wilcoxon signed-rank test, 2-tailed.

RESULTS: The mean preoperative IOP was 13.4 + 6.6 mmHg (range, 1–28 mmHg; n = 20 eyes). The mean postoperative IOP at 1-day post op was 21.1 + 7.6 mmHg (range, 8–35 mmHg; n = 20 eyes; p value 0.00262). The mean postoperative IOP at 1-week post op was 15.6 + 4.6 mmHg (range, 8–35 mmHg; n = 20 eyes; p value 0.14156). The mean postoperative IOP at 1-month post op was 15.6 + 5.3 mmHg (range, 7–28 mmHg; n = 20 eyes; p value 0.1556). The mean postoperative IOP at 3-month post op was 15.1 + 4.4 mmHg (range, 6–23 mmHg; n = 20 eyes; p value 0.30302). The mean postoperative IOP at 6-month post op was 15.1 + 3.7 mmHg (range, 8–23 mmHg; n = 17 eyes; p value 0.1096).

DISCUSSION: Only the difference between pre-op and one day post-op IOP was statistically significant. This difference can be attributed to increased inflammation, transient trabecular meshwork obstruction by fibrin or debris after the surgical procedure or reversible ciliary body edema. There was no change between pre IOP and measurements in 1 week, 1 month, 3 months, and 6 months post op.

CONCLUSION: There is a low incidence of increased IOP postoperatively when using the 23G infusion line to ventilate during Silicon Oil Injection. The novel technique decreases the morbidity and cost of treatment after complex retina surgery that require SO tamponade.

Infusion line used as a vent during Silicone Oil Injection in 23 Gauge Pars Plana Vitrectomy.

Itza Acevedo Ojeda, MD1, Alma M. Mas, MD2, Andres Emanuelli, MD2

University of Puerto Rico School of Medicine. Transitional year residency program1. Department of Ophthalmology2

INTRODUCTION: Silicone oil (SO) injection in conjunction with pars plana vitrectomy (PPV) is useful in the management of complex retinal detachments. However, several complications have been associated with the use of SO as an endotamponade. Intracocular pressure (IOP) elevation is the most commonly reported complication of SO injection in aphakic and pseudophakic eyes, it may range from mild and transient to severe pressure spikes resulting in loss of vision. There are factor that can be modified to decrease the morbidity with these intracocular pressure spikes. The present study was designed to describe a novel surgical technique associated with decreased risk of IOP spikes.

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Prevalence of Depression in Patients with End Stage Renal Disease on Hemodialysis at the Western Area of Puerto Rico.

Sherryl D. Mitchell Hernandez, M.D., ACP Associate; Milton Carrero, M.D., FACP

Introduction: Depressive symptoms and depression are major public health problems and both are between the most frequent psychological problems reported among end-stage renal disease (ESRD) patients being treated with hemodialysis. We assessed the prevalence of depressive symptoms among hemodialysis patients in the West area of Puerto Rico.

Purpose: A systematic assessment of depression in hemodialysis patients would supply information about patient feelings of well-being. Existing data suggest that screening for depression may help identify patients at higher risk for death and hospitalization.

Methods: This is a cross-sectional study with a sample of 94 hemodialysis patients selected from 3 dialysis centers in the West area of Puerto Rico, including the Fresenius center at Aguadilla and two other Centers at Mayaguez, after providing written informed consent for patients.

The Beck Depression Inventory (BDI-II) is considered to be the standard instrument for assessing symptoms of depression and screening for clinical depression. We used this scale of 21 short answer questions to assess patient mood.
The main analysis was restricted to the prevalent cross-section of 94 patients with information on degree of depression diagnosis. Baseline data regarding years after ESRD diagnosis, socio-demographic factors, comorbidities, years in hemodialysis treatment, were collected at patient entry into the study.

Results: Prevalence of depression in patients with ESRD/HD in the West area of Puerto Rico was present in 53% of the population at time of study. According to the chi-square criterion, there is no significant effect of the variable, and it was that married patients had more prevalence of depression than divorced ones, with a Chi-squared=6.7122, df=1, p-value=0.00817 (significance at 1%).

Conclusion: We recommend early implementation of psychological measures and medical treatment in ESRD patients on HD, in an effort to improve prognosis associated with depression in these particular patients and decrease morbidity and mortality, as well as hospitalizations.

PREVALENCIA DE MISCONCEPCIÓNS REGARDING MEASLES, MUMPS, AND RUBEULA VACCINE CONTRAINDICATIONS
Monique Adorno MD1, Carmen Rivera MD1, Vylma Velazquez MD1

1Pediatric Residency Program, San Luis Episcopal Hospital, Ponce, Puerto Rico

For years it has been debated the safety of administering the combined Measles, Mumps and Rubella (MMR) vaccine because of concern of anaphylaxis of the live attenuated virus used in the vaccine is grown in cultures chick embryo fibroblasts. Despite current guidelines and protocols regarding MMR vaccine administration, there are still misconceptions regarding the selection criteria of whom to administer and to whom withhold this vaccine. Furthermore, this discrepancy is causing inadequate immunizations and proposing a health risk in our children of Puerto Rico.

A brief questionnaire of seven items was answered by twenty five voluntary adult participants, whom are responsible for and protect of a child in a public health center in the West area of Puerto Rico, that was administrated to Ponce, Puerto Rico, throughout December 2013 to March 2014. Variables identified in the questionnaire such as prior egg allergy history and actions taken as to administering or withholding the vaccine were accounted for and results were plotted for analysis. This was a IRB approved exemption research study. In our results it was seen that the majority of the health care providers with most years of experience still take into consideration of egg allergy. All study subjects were nursing staff and had average of greater than 10 years of experience. And within this group 77% of nursing staff did ask about egg allergy prior to vaccine administration and 71% referred that they would deny the vaccine if the child had an egg allergy.

The screening question regarding egg allergy or lack of exposure, is still very prevalent at the moment of immunization and is apparently taken into consideration by healthcare providers while deciding whether to administer the MMR vaccine, delay administration or omit administration entirely. Furthermore, it was seen that the majority of the responders took inappropriate action regarding egg allergy. Proving our hypothesis that children with egg allergies were wrongfully delayed or denied the administration of the MMR vaccine due to the concern of anaphylaxis risk. Special precautions among these children are not required due to the extremely low risk. Additionally, the benefits of receiving the vaccine for these preventable diseases outweighs the minimal to no associated risk of anaphylaxis.

DESCRIPTION OF FEBRILE ILLNESS AND DENGUE IN INFANTS LESS THAN 90 DAYS OLD.
M. Tavárez MD MPH1, J. Pérez-Padilla RN MPH1, N. J. López MD1, I. Iriarte MD MPH1, L. Alvarado MD1

1Pediatric Residency Program, Ponce Health Science University/Saint Luke’s Episcopal Hospital, Ponce, Puerto Rico; 2Dengue Branch, Division of Vector-Borne Diseases, Centers for Disease Control and Prevention, San Juan, Puerto Rico.

Fever in the first 90 days of life presents a diagnostic and therapeutic challenge for pediatricians. Bacterial infections should be identified in order to provide adequate treatment, but sepsis workup is invasive and costly. Differentiation between bacterial and viral etiology is important to prevent unnecessary invasive procedures. Viruses, including dengue (DENV), are believed to be an important cause of fever in endemic countries, but they are not routinely identified and knowledge of their contribution to febrile illness in young infants is limited. This study used data obtained from the Sentinel Enhanced Dengue Surveillance System (SEDSS) established in southern Puerto Rico from May 7, 2012 to May 6, 2014. SEDSS recruits acute febrile illness (AFI) patients, collects clinical data and tests for 22 infectious agents, including DENV, respiratory pathogens and enteroviruses. Reverse transcriptase - polymerase chain reaction and ELISA were used to identify the etiologic agents as appropriate. Of 5,325 patients enrolled during this period, SEDSS enrolled 53 (1%) infants less than 90 days old. Thirty-two (60.4%) infants were male and 10 (18.9%) were less than 31 days old. Fever in the first 90 days of life presents a diagnostic and therapeutic challenge for pediatricians. Bacterial infections should be identified in order to provide adequate treatment, but sepsis workup is invasive and costly. Differentiation between bacterial and viral etiology is important to prevent unnecessary invasive procedures. Viruses, including dengue (DENV), are believed to be an important cause of fever in endemic countries, but they are not routinely identified and knowledge of their contribution to febrile illness in young infants is limited. This study used data obtained from the Sentinel Enhanced Dengue Surveillance System (SEDSS) established in southern Puerto Rico from May 7, 2012 to May 6, 2014. SEDSS recruits acute febrile illness (AFI) patients, collects clinical data and tests for 22 infectious agents, including DENV, respiratory pathogens and enteroviruses. Reverse transcriptase - polymerase chain reaction and ELISA were used to identify the etiologic agents as appropriate. Of 5,325 patients enrolled during this period, SEDSS enrolled 53 (1%) infants less than 90 days old. Thirty-two (60.4%) infants were male and 10 (18.9%) were less than 31 days old. Twenty-six (49.1%) presented the same day they developed fever, and most (90.6%) presented within the first 2 days. Most Infants (73.6%) were admitted for treatments and the etiologic agent was identified in 20 (37.7%) infants: 3 (5.7%) had a bacterial infection, 13 (24.5%) had a viral infection, and 4 (7.5%) had viral/bacterial co-infection. Viruses detected included DENV (n=4), Influenza A virus (n=6), Parainfluenza virus-3 (n=1), and RSV (n=2). Five infants (9%) had a positive co-infection. Additionally, the benefits of receiving the vaccine for these preventable diseases outweighs the minimal to no associated risk of anaphylaxis.
Lifespan of children with developmental delay is increasing due to advancements in medical technology. Parents as primary caregivers need to modify their lifestyles in order to effectively raise these children in the community. For any parent, to provide care of their children is hard work, but for the parents of a child with special needs it is harder and may be translated into disruption in the family routine, financial stress and reduced social activities. Previous studies have demonstrated parents of children with developmental delay have poor quality of life as compared with parents of children without disabilities. The aims of this study are: (1) to determine which factors influence parents of children with developmental delay are most affected and (2) to determine if there is any difference in the quality of life between parents of children with disabilities and those without in our sample.

A cross-sectional study approved by IRB for the period of January to May of 2014, using the WHOQOL-BREF, a multidimensional quality of life questionnaire developed across 15 international field centers. The questionnaire consists of 26 items including 4 main domains: physical health, psychological, social relationships and environment. The subject population was consenting adults (more than 21 years) who are primary caregiver of a child with developmental delay and receive services in SER of Puerto Rico, compared with caregivers of children with no developmental delay or chronic illness admitted to the HESL Pediatric Ward during the study period.

A total number of 33 caregivers participated in the study of which 17 were caregivers of children with developmental delay. An adequate number of and trained personnel to provide this service, 61% and 47% respectively. The participants, a finding typical for anxious populations.

Results: There was no significant difference in SCR levels amongst healthy and anxious participants regarding fear conditioning and extinction as described by Milad et al. (2005). Physiological reactivity was measured by SCR and compared between the two groups. Other variables such as age, gender, and chosen shock level were also assessed.

Results: There was no significant difference in SCR levels amongst healthy and anxious participants regarding fear conditioning and extinction as described by Milad et al. (2005). Physiological reactivity was measured by SCR and compared between the two groups. Other variables such as age, gender, and chosen shock level were also assessed.

Bullying prevention: Educational intervention to assess perception and knowledge among middle school students.

Authors: Jorge Rivera Mirabal1, Melissa Rodriguez1, Michelle Osorio1, Belinda Beauchamp MD1

1 University of Puerto Rico, Medical Sciences Campus, School of Medicine San Juan, PR.

Bullying is seen as an event in which a person is exposed repeatedly to a negative action from one or more people. It is a public health concern that has social implications. In the United States, 20.8% to 53.6% of students reported being bullied at school at least once in a 2 month period. From a safety standpoint, bullying is a risk factor, since both children who bully and their victims are at more risk to incur in future criminal behavior than those who haven’t suffered through these processes. Bullying also has economic implications. As part of the wider phenomena of school violence, estimates indicate that early school leaving due to violence costs from $6.482 billion to $32.414 billion a year to the economy of the United States of America. Although many studies focus their efforts on bullying at the level of a relationship between the aggressor and victim, it is important to note that bullying is a broader social phenomenon that has severe consequences for the victim, the aggressor and the victim’s peers. The present study was designed to assess the popular knowledge about bullying in a group of middle school students and to determine what are some of the barriers to the implementation of anti-bullying policies and programs in schools.

Knowledge and Receptiveness of Health Professionals on the Topic of Perinatal Palliative Care

Nicolle Dávila Castrodad MD; Liza Sanchez Plazas, MD; Lourdes García-Fragoso, MD.

Purpose: Perinatal palliative care is an important growing field in medicine that is not readily available in Puerto Rico. Considering that the University Pediatric Hospital (UPH) is a tertiary hospital, it clearly receives critical patients including those with life-limiting conditions, which would benefit from palliative care services. We believe the majority of the medical professionals of UPH and University District Hospital (UDH) have little knowledge and training in the area of perinatal palliative care yet, most would agree these services would be of great benefit.

Methods: This is a cross sectional study which included a questionnaire with demographic data and 27 questions about the subject’s knowledge and receptiveness on the topic of perinatal palliative care. Study subjects included the Pediatrics, Neonatology, and OB-Gyn residents, the Neonatology and OB-Gyn faculty members, pediatricians working in the Neonatal Intensive Care Unit (NICU) and the nurses working in the NICU and delivery room.

Results: The questionnaire was completed by 82 medical professionals, 80% females and 20% males. The mean age of the participants was 35.8 years (range 23-64). Of the participants, 51% were physicians and 49% nurses. Religion was practiced by 89%, with the majority being Catholic (59%). Most of the professionals agreed that there are no protocols established to provide palliative care in their units. Almost half (48%) responded not having received Continuing Medical Education to aid in communication with parents dealing with the death process. More than half (58%) felt that the staff goes beyond what they feel comfortable with in using technological activities. The participants (85%) felt that their personal attitudes about death do not affect their willingness to deliver palliative care.

Conclusions: As we had predicted, these medical professionals believe palliative care is an important aspect of neonatal medicine. Furthermore, they confirmed the lack of trained personnel and protocols for palliative care services in their institutions. They demonstrated their willingness to learn and provide this care to their patients and families. Further studies are needed to help in the implementation of a palliative care protocol of neonatal services.
Conclusions: In comparison to healthy participants who have been exposed to trauma, anxious participants with traumatic experiences show a blunted response to fear renewal. According to the literature, decreased fear renewal could predict altered responses to contextually ambiguous scenarios, leading anxious people to be unfit to respond to stressors. These results could lead to a better understanding of resilience to trauma and lead to important implications in the treatment of populations exposed to traumatic events.

Ocular findings in patients with Chikungunya fever
Jan P Ulloa1, Pedro J Dávila2, Natalio J Izquierdo1

1 School of Medicine, Medical Sciences Campus, University of Puerto Rico
2Transitional Year Program, School of Medicine, University of Puerto Rico

Purpose: To evaluate ocular manifestations in patients with Chikungunya fever.

Methods: A chart review of 139 patients with Chikungunya fever who visited a local emergency room was done. All patients had a positive viral specific IgM (ELISA). Frequencies and Pearson Chi-square analysis were determined.

Results: Of the 139 patients, 42 (30.2%) had red eyes, 27 (19.4%) had conjunctivitis, and 13 (9.4%) had anterior uveitis. Patients with history of diabetes, hypertension or cancer, were more likely to have red eyes (p = 0.033), and anterior uveitis (p = 0.006). Patients with symptoms such as nausea or vomiting were more likely to have red eyes (p = 0.001). 75 out of 139 patients (54%) had lymphopenia, and 46 patients (33.1%) were hospitalized.

Conclusions: Red eyes, conjunctivitis and anterior uveitis occur frequently in patients with Chikungunya Fever. Systemic diseases such as diabetes, hypertension and cancer may increase the risk of external ocular manifestations in patients with the disease. For these reasons, routine ophthalmic evaluation is warranted in patients with the disease. This disease remains an important public health issue, as one third of patients may remain hospitalized.

Analysis of the Mysterious Viral Accessory Protein OrfA and Its Role in the Feline AIDS-causing Lentivirus.
Adriana Marcano1, James Morrison2, Hind J. Fadel2,3, and Eric M. Poeschla2,3

1Summer Research Fellowship, 2Departments of Molecular Medicine and 3Division of Infectious Diseases, Mayo Clinic College of Medicine, Rochester MN.

Purpose: To investigate the role of a Feline Immunodeficiency Virus (FIV) encoded protein called OrfA during viral production and infection of feline lymphocytes. FIV and other retroviruses like HIV encode proteins with-in their genome that counteract cell-specific host proteins and allows for efficient viral replication within these cells. OrfA has been implicated in down-regulation of the primary FIV entry receptor CD134 but has only been studied in a particular FIV strain. In addition to this, the exact role of OrfA has not been fully elucidated due to difficulties expressing and detecting it in-vitro. In our current study, we re-engineered OrfA expression vectors and investigated its requirement in primary and lab adapted strains representing multiple FIV clades.

Methods: OrfA plasmids containing an HA-tag codon where cloned and transfected into 293T cells. OrfA expression in cells was confirmed with the use of an anti-HA-antibody via Western Blot. 293T cells were transfected with OrfA+/- FIV strains and reverse transcriptase activity was used to measure viral production.

Each virus was titrated on lymphocytes or CrFK cells expressing the primary viral entry receptor CD134 by FIV immunohistochemical assay (FIA).

FIV replication was measured using reverse transcriptase activity in the supernatant of virus infected CrFK and feline lymphocytes +/- CD134.

Results and conclusions: The HA-tagged OrfA plasmids generated in our study allowed us to successfully identify the localization of OrfA within the cell and study it in greater detail. Our investigation demonstrates that OrfA localizes mainly to the nucleus and is packaged into FIV particles. Moreover, OrfA was indispensable for FIV replication in primary domestic feline lymphocytes but not in CrFK cells. The packaging of OrfA into viral particles suggests a role for OrfA early in the viral life-cycle similar to a HIV-1 Vpr.

Does The Axillary Nerve Play A Role In The Innervation Of The Long Head Of The Triceps Muscle? A Cadaveric Study In A Puerto Rican Population.
Medina Stefan1, Mejias Emanuel1, Veras Tavarez, Wilson R., MD1

1Universidad Central del Caribe

The presence of an unusual innervation to the long head of the brachii muscle, different as described in anatomical textbooks, may have clinical importance. We dissected the posterior cord of the brachial plexus in a specimen in embalmed cadavers, and the path of axillary nerve was followed to the quadrangular space. In a prone position, the posterior attachment of the deltoid muscle was cut to expose the long head of the triceps and its relation with the axillary nerve. After the dissection was carried out, many photographs were taken. The objective of this study was to clarify the motor innervation of the long head of the triceps brachii muscle because it has not been fully elucidated. The majority of anatomical textbooks state that the motor branch of the long head of the triceps brachii arises from the radial nerve. In our study, we found some specimens where the axillary nerve was innervating the long head of the triceps. It is very important to be aware about the presence of this variation in case the motor branch of the triceps muscle is used as a donor for nerve transfer. Recognizing this variation may also be important in radial and axillary nerve pathologies.

A Unique Anatomical Variation: Three Right Colic Branches Arising From The Superior Mesenteric And Gastroduodenal Arteries. Case Report.
Medina Stefan1, Mejias Emanuel1, Veras Tavarez, Wilson R., MD1

1Universidad Central del Caribe.

Anatomical variations in the vasculature of the gastrointestinal tract are a topic of concern to surgeons due to their clinical implications. During routine dissection, an unusual origin of the right colic artery was identified in a male cadaver. Careful dissection of all the branches of the superior mesenteric artery and celiac trunk were recorded. It was found that the gastroduodenal artery, in addition to its normal branches, gave rise to the inferior pancreaticoduodenal artery, the right gastric artery, and the right colic artery. The superior mesenteric artery had been traditionally described as giving three main branches: the middle colic artery, right colic artery and the ileocolic artery, in addition to the inferior pancreaticoduodenal artery, and the jejunal and ileal branches. In this case, the superior mesenteric artery did not give the inferior pancreaticoduodenal artery, and instead gave rise to two right colic arteries. Embryology dictates the pattern of vascularization and innervation to the different abdominal organs, and any alteration during this period may alter this pattern. The right colic artery plays an important role in the irrigation of the ascending colon, and anastomoses with the middle and ileocolic arteries. Variations in this branch, such as the one described in this case report, must be taken into account in surgical procedures involving this area to avoid any complications. The surgical use of the colon as an esophageal substitution or reconstruction exemplifies the importance of being acquainted with the anatomical variations in the region of colic arteries.
Social reintegration & coping of young adult cancer survivors in Puerto Rico: Ideas for the development of a psycho-educational program.

Gerardo Olivella, MPH1, Miguel E. Marrero Medina, DEA, MPH1
1Ponce Health Sciences University.

Purpose: Understand the needs of young cancer survivors that live in Puerto Rico, obtaining ideas about psycho-social level adaptation and reintegration strategies for working those needs in the young adult cancer survivor’s population.

Methods: Quantitative & Qualitative techniques using methodological triangulation. Qualitative / in depth interviews and focus groups were conducted to understand the psychosocial needs of the young adults cancer survivors. The focus groups were with health professionals that work in oncology centers, and psychology students. Qualitative interviews were conducted with young cancer survivors and their caregivers. A posteriori analytic encoding analysis was used for the data, identifying patterns and connections between different concepts discussed in the qualitative experience. A 2nd part of the study include the use of a questionnaire to understand, prioritize & analyze the needs expressed in the qualitative part and to evaluate the best educational strategies for this population.

Results: Participants presented high levels of learned helplessness, depression, low self-esteem, high levels of anxiety, anger, fear, sorrow, and uncertainty, thus increasing the need for social support. A psycho-oncology educational residence program as an effective way to help young cancer survivors cope with their psycho-social reintegration was suggested. All groups agreed that using active coping strategies can help overcome the anxiety in young cancer survivorship.

Conclusions: Data supporting a psycho-oncology educational program was presented, supplying adequate educational and communication approaches or strategies. Program should be designed considering young adult cancer survivors necessities including Hispanic socio-cultural elements.

Evaluating CPA as a cytotoxic agent in endometrial and ovarian carcinoma cells.

Carolina J. García García1, Jessica L. Bowser, PhDD, Russell R. Broaddu, MD, PhD2
1School of Medicine, University of Puerto Rico – Medical Sciences Campus.
2Department of Translational Molecular Pathology, The University of Texas MD Anderson Cancer Center.
3Department of Pathology, The University of Texas MD Anderson Cancer Center.

Endometrial cancer and ovarian cancer are the most common and most deadly gynecological malignancies in the US, respectively. Despite the advancement of single-agent and combined-agent chemotherapy regimens for these cancers, most tumors eventually develop resistance mechanisms. Therefore, novel targeted therapies or strategies to enhance the sensitivity of tumor cells to common chemotherapies are needed. Adenosine is a small molecule known for its tissue-protective role in numerous tissues and organ systems. Recently, our lab has shown that adenosine’s activation of the adenosine A1 receptor (A1AR) is protective of the integrity of epithelial cells in the endometrium. Studies in breast and colon cancer have shown that cancer cells are more sensitive to chemotherapy agents when they exhibit more epithelial-like features. Thus, we hypothesized that the treatment of cancer cells in combination with A1AR agonist, N6-cyclopentyladenosine (CPA), would cause cells to be more sensitive to paclitaxel, a standard chemotherapy used to treat gynecological cancers. To test our hypothesis, we assessed cell viability to drug treatments, using MTT assays, in a panel of endometrial and ovarian cancer cells. Two endometrial cancer cell lines, HEC-50 and KLE, and an ovarian cancer cell line, HEYA8, showed significant sensitivity to paclitaxel in combination with CPA as compared to paclitaxel alone. However, experiments using CPA alone, revealed CPA was significantly contributing to the observed reduction in cell viability, as it achieved the same effect as CPA in combination with paclitaxel. Thus, we then hypothesized that the changes in cell viability in HEC-50 and HEYA8 cells was due to CPA cytotoxic effects, such as inducing cell death or interfering with cell cycle progression. HEC50 and HEYA8 cells were assessed with increasing concentrations of CPA using Annexin V-PI staining and FACS. Cells were also assessed for changes in cell cycle progression with PI. No changes in cell death or cell cycle progression were found; therefore these could not explain our MTT results. To validate the MTT results, we assessed cell viability using Trypan Blue staining, a technique that is independent of mitochondrial viability. No reduction in cell viability was seen this time, indicating that the changes seen with MTT assays were mitochondrial-dependent but not directly related to cell viability. Future work will assess if CPA may be down-regulating mitochondrial MTT-reducing oxidoreductases and dehydrogenases or interfering with focal adhesions. More pre-clinical studies are needed to determine the efficacy CPA may have in cancer patients.

A Pilot Study of Home-Based Psychotherapy for Posttraumatic Stress Disorder.

Janice Soto Morales1, Stephanie Y. Wells2,3, Leslie A. Morland, Ph.D.2,4, Steven R. Thorp, Ph.D.2,3
1University of Puerto Rico School of Medicine, San Juan, Puerto Rico
2VA San Diego Healthcare System, San Diego, California
3University of California, San Diego, California
4University of Puerto Rico School of Medicine, San Juan, Puerto Rico

A substantial proportion of veterans living in rural or remote areas face critical geographically-based barriers to accessing evidence-based PTSD treatments. Non-traditional delivery methods are being developed in order to try and reduce the obstacles to mental health care access. Home-based treatment may overcome barriers to service utilization, such as travel and mental health stigma, and is often associated with lower dropout rates than traditional care. Telehealth - using electronic communications technology to provide care from a distance – has been used to successfully provide psychotherapy, and may be a tool to address these obstacles. The objective of this presentation is to describe the lessons learned from a study of pilot participants for a larger randomized clinical trial comparing three delivery modalities of prolonged exposure therapy (PE) for posttraumatic stress disorder (PTSD): home-based telehealth, office-based telehealth, and in-office, in-person care. The participants for our pilot study are five veterans diagnosed with PTSD who completed 7 to 15 90-minute, individual sessions of PE. Two participants completed PE via home-based telehealth; two completed via in-home, in-person care; and one began with home-based telehealth but was transitioned to office-based telehealth. We conducted assessments before and after treatment to assess PTSD symptoms, depressive symptoms, and satisfaction with treatment and the video teleconferencing technology (VTC). We also assessed the therapists’ satisfaction. All participants completed treatment with clinically significant improvements in PTSD and depressive symptoms, and participants and therapists reported moderate to strong satisfaction with treatment, despite technological problems. Although VTC was generally reliable and user-friendly, the three participants who used this technology experienced a variety of technological difficulties. Our results imply promise for these novel modalities for treatment. Among the greatest lessons learned from this pilot study is the value of feedback about the home-based telehealth modality. This feedback has allowed us to modify our use of technology, make it more user-friendly, and lessen therapist and patient burden. We have noticed advantages and drawbacks to office-based modalities, and future research should aim to determine if clinical outcomes differ as well. This pilot study, though small, has significant scientific relevance because it describes and explores innovative methods for delivering psychotherapy to veterans towards with limited access to healthcare. These methods may be used to reduce health disparities and improve the quality of health services for our veterans.
**Rapidly Progressive Seeding of a Community Acquired Pathogen in an Immune-Competent Host—End Organ Damage from Head to Bone**

Daisy Torres-Miranda (a,*), Farah Al-Saffar (a), Saif Ibrahim (a), Stephanie Font-Diaz (b)

a. Department of Internal Medicine, University of Florida, UFHealth Medical Center, Jacksonville Florida
b. Department of Radiology, University of Florida, UF Health Medical Center, Jacksonville Florida

**Introduction:**

Methicillin-sensitive Staphylococcus aureus is a gram-positive coccii in clusters. It is carried in anterior nares by 20-30% of population. Higher carriage rates are seen in diabetics, intravenous drug use (IVDU), HIV and dialysis patients. It has been shown that carriers have an increased risk of subsequent infection [1,2]. All patients with S. aureus bacteremia should undergo transcranial echo (TTE) since S. aureus bacteremia and heart valve involvement is in 25% of the cases [3]. Nevertheless, transesophageal echocardiography (TEE) has been shown to be superior to TTE for the diagnosis of infective endocarditis (IE), identifying small vegetations and abscesses [3,4]. Nafcillin is a well-established agent for serious systemic non infective endocarditis (IE), identifying new severe mitral and mild aortic stenosis with a definitive 1.5 cm mobile vegetation on posterior mitral leaflet. We present a very interesting case of a rapidly progressive MSSA infection. MSSA meningitis is a rare disorder; there are few reported cases in the literature so date. We describe a case of MSSA bacteremia, of questionable source, that resulted in MSSA endocarditis affecting right and left heart in a patient who did not have a history of intravenous drug use (IVDU) or immunosuppression. The case was complicated by septic emboli to systemic circulation involving the kidneys, vertebral spine (osteomyelitis), lungs and brain with consequent meningitis and stroke. Even when MSSA infections are well known, to our knowledge there are no previous case reports describing such an acute-simultaneous-manifestation of multi-end-organ failure, including meningitis and stroke. These latter are rarely reported, even individually.

**Case Report:**

This is a 64-years-old male patient with a past medical history of hypertension, hiatal hernia and osteoarthritis that presented to the emergency department with a chief complaint of acute worsening of his usual chronic low back pain. He used to ambulate with a cane and later developed by back pain. On further review of systems he reported having chronic bilateral knee pain related with osteoarthritis and a congenital deformation of his right knee. He is associated with intravenous drug use (IVDU) for many years, occasional user of alcohol and marijuana, but denied ever using intravenous drugs and toxicology was positive only for oxycodone, which he used for chronic lumbar pain for several years.

We present a very interesting case of a rapidly progressive methillin-sensitive Staphylococcus aureus (MSSA) infection. Meningitis is a rare disease; there are only few reported cases in the literature to date. We describe a case of MSSA bacteremia, of questionable source, that resulted in MSSA endocarditis affecting right and left heart in a patient who did not have a history of intravenous drug use (IVDU) or immunosuppression. The case was complicated by septic emboli to systemic circulation involving the kidneys, vertebral spine (osteomyelitis), lungs and brain with consequent meningitis and stroke. Even when MSSA infections are well known, to our knowledge there are no previous case reports describing such an acute-simultaneous-manifestation of multi-end-organ failure, including meningitis and stroke. These latter are rarely reported, even individually.

**Abstract:**

This report describes a 64-years-old male patient that presented with sudden onset of his usual chronic low back pain, progressing in lower extremities and subjective fevers at home. Spine CT failed to demonstrate acute septic foci but showed partially visualized lung cavitory lesion and renal pole abnormalities. Blood cultures grew methillin-sensitive Staphylococcus Aureus (MSSA). Transthoracic echocardiogram (TTE) showed no signs of infective endocarditis (IE). Later, the patient experienced an acute on chronic meningitis and examination showed development of a new murmur. He also developed new hemiparesis with up-going babinski reflex. A head MRI showed multiple infarctions. MRI spine displayed osteomyelitis at T12-L1. Cerebro-splanial fluid was positive for meningitis.

MSSA meningitis and bacteremia diagnosis showed ejection fraction of 65% and normal valves. On day two of hospitalization the clinical picture worsened as the patient suddenly developed an altered mental status and nuchal rigidity. This led to a lumbar puncture that confirmed meningitis with a CSF leukocytosis of 1,157 (neutrophil 95%) and culture positive for S. aureus. Testing for HIV, Herpes Simplex Virus (HSV) and Tuberculin skin test (PDD) were all negative. Spine MRI showed osteomyelitis at T12-L1 and previously seen (in CT scan) renal infarcts. He had a recent diagnosis of multiple lung nodules that where following a non-suspicious pattr for malignancy; however given his strong smoking history, it was something to be worked-up later as outpatient, when the patient is out his critical state. Patient continued to be febrile and six days later he demonstrated deterioration on clinical status with tachypnea and hypoxia. On subsequent examination patient showed development of a new systolic 2/6 murmur, louder over cardiac apex area. Lungs sound wet with scattered crackles bilaterally. He also developed new right hemiparesis with ugoing babinski reflex of the right side. At this point, the patient was switched to nafcillin 2g IV q4h when blood culture results demonstrated methicillin susceptibility. Head MRI showed multiple infarcts in a non-vascular pattern secondary to septic embolisms (See Figure 1).

**Figure 1:** (A) Axial diffusion weighted im- age demonstrating hyper-intensities in a non-vascular pattern with (B) corresponding hypo-intense Apparent Diffusion Coefficient findings. (C) (D) Right occipital restricted diffu- sion. Findings are compatible with acute multifocal ischemic secondary to septic embolisms.
A TEE was performed showing severe mitral and mild tricuspid regurgitation [7] and patient had aortic valve replacement. Deformation of the right knee that was causing much more pain, later. There was evidence of septic arthritis of the right knee, as the initial source of the bacteremia, but this was not proved. Some determinants of poor outcome when patient has a septic arthritis are: older age; male gender; in presentation, a delayed initiation of antimicrobial treatment and a delay in hospitalization and vital signs all seen in our patient [8, 9].

Diferentiation of IE from isolated bacteremia by the clinical picture is not possible. In our case, TEE demonstrated mobile vegetation on mitral posterior leaflet but, also and more importantly, the pre-existing observed regurgitations. In this particular case this speaks about a rapid progression of a virulent pathogen over the sensitivity and specificity of the studies. Severe regurgitation should be considered an indicator of bacteremia but not necessarily associated with endocardial infection. The development of endocarditis related to the time a patient is not treated or undertreated for a bacteremia (the bacteremia-to-endocarditis timeline) is often significant morbidity secondary to metastatic seeding. It is not always obvious by performance of echocardiograms, therefore the pathogen virulence had much to do with the subsequent management of endocardial infection. The development of endocarditis related to the time a patient is treated or undertreated for a bacteremia is not necessarily associated with endocardial infection, but this was not proven. Furthermore, in our patient the presence of septic arthritis was the obvious cause of the patient’s bacteremia. Therefore, S. aureus bacteremia does not establish the source of infection [11].

Community-acquired MSSA meningitis due to acute bacterial meningitis rarely occurs in patients without risk factors or immunosuppression. Diagnosis of pediatric acute bacterial meningitis is challenging, making the clinical management of spinal infection in patients with a history of IVDU is challenging, mainly due to misunderstanding of infections caused by MSSA [6]. However, when meningitis is the only or the most important clinical manifestation of MSSA bacteremia, the diagnosis of bacterial meningitis is not necessarily associated with acute bacterial meningitis. Differentiation of IE from isolated bacteremia, pending the results of cultures, empirical antibiotic therapy should be considered as one of the drugs of choice for initial therapy of acute bacterial meningitis. However, if in our patient [8, 9].

Failure to remove the causative pathogen of MSSA bacteremia. Indeed, vancomycin therapy has been associated with mortality and Morbidity difficult to interpret given the small number of patients in the literature. Another factor is that the antibiotic of choice for treating IE caused by the pathogen virulence had much to do with the subsequent management of endocardial infection. The development of endocarditis related to the time a patient is treated or undertreated for a bacteremia is not necessarily associated with endocardial infection, but this was not proven. Furthermore, in our patient the presence of septic arthritis was the obvious cause of the patient’s bacteremia. Therefore, S. aureus bacteremia does not establish the source of infection [11].

The use of head MRI for evaluation of IE before urgent valve surgery to investigate whether there were plants or vegetations affecting postoperative outcomes has been suggested. In patients with Staphylococcal endocarditis, a small number of patients in the literature. Another factor is that the antibiotic of choice for treating IE caused by the pathogen virulence had much to do with the subsequent management of endocardial infection. The development of endocarditis related to the time a patient is treated or undertreated for a bacteremia is not necessarily associated with endocardial infection, but this was not proven. Furthermore, in our patient the presence of septic arthritis was the obvious cause of the patient’s bacteremia. Therefore, S. aureus bacteremia does not establish the source of infection [11].

Conflict of Interest: The authors declare that there is no conflict of interest. All the authors have contributed equally to this manuscript. All authors read and approved the final paper.

References:

Knee avascular necrosis in HIV patient

Victor R. Ortiz Declet MD
PGY-5 Orthopaedic Surgery
Antonio Soler Salas MD
Sports Medicine Attending

University of Puerto Rico, Medical Sciences Campus
Email: victor.ortiz6@upr.edu
Address: 4837 ave isla verde - El Girasol 112 - Carolina PR 00979

Background

Avascular necrosis (AVN), also termed osteonecrosis, indicates ischemic death of the bone as a result of insufficient arterial blood supply (1-3). The incidence rate of AVN has been reported to be 0.135% in the general population, although incidence rates ranging 0.3-0.45% have been observed in HIV-infected patients, most commonly in the hips (1-3). Although the exact etiology of osteonecrosis remains unclear, predisposing factors, such as HIV-related complications, an adverse event of highly active antiretroviral therapy (HAART) or a result of a HIV-associated disease, have been suggested (4). There are reports suggesting an association between protease inhibitors and a decreased bone density in patients (5-7). Although it should be noted that AVN was reported before the era of ARV therapy, evidence suggesting HIV virus as the only risk factor for the development of avascular necrosis is limited (5-6). Secondary avascular necrosis of the knee is more common in women below 55 years with risk factors. Typically involves more than one compartment of the knee or even the metaphysis. 80% are bilateral. It presents with pain in weight bearing, especially sitting to standing.

Case Report

Case of a 52 year old female with history of HIV, CD4: 350 with unknown viral load, diagnosed 24 years ago and chronic smoker who presented to the orthopedic surgery clinic with chief complaint of left knee pain x three months of evolution. Pain was described as sharp, 10/10 in intensity, constant, and diffuse with no radiation. Worsened when going from sitting to standing position. Alleviated with none. Referred no improvement despite being on pain medications and physical therapy. Patient started antiretroviral therapy 5 years after diagnosis. Her therapy consists of Ritonavir (protease inhibitor), Atazanavir, Truvada (emtricitabine/tenofovir-NRTI).

Physical exam showed a well nourished 5’3” female weighing 140 pounds. Left knee had no swelling or erythema, +joint line tenderness, painful ROM, and crepitus. Right knee with normal findings. Other articulations have normal findings. Skin and Neurological exam intact.

Figure 1A and 1B. Standing AP and LAT X-ray respectively of bilateral knees showed lesions that involve diaphysis, metaphysis and epiphysis with central lucency and surrounding sclerosis with adequate joint line space.

Abstract

Secondary avascular necrosis of the knee is a common finding among HIV patients on antiretroviral therapy. Incidence in this group is higher than in the general population. There is no clear understanding of the pathophysiology of the disease. It is thought to be related to the virus itself and/or antiretroviral medications. Early recognition and management of knee pain reduces the need of extensive surgery such as total knee arthroplasty giving way to less invasive procedures like core decompression thus, reducing the risk of more serious complications.

Index Words: bilateral, knee, avascular necrosis, HIV patient

Conclusion

Secondary osteonecrosis of the knee secondary to antiretroviral therapy or HIV is a concern among these patients. Clinicians need to be aware of the subtle yet frequent complications of AVN in patients on ARV therapy, especially those patients on protease inhibitors. Early recognition and management of knee pain has been proven to reduce the need of extensive surgery giving way to less invasive procedures like core decompression thus, reducing the risk of more serious complications.

References


Patient was referred to a reconstructive knee surgery specialist after the above findings.

Figure 2A and 2B. Left knee LAT and AP MRI respectively shows joint fluid, irregular patchy areas of low signal intensity on T1-weighted images and heterogeneous lesions with high intensity signal surrounding low intensity center with evidence of tricompartmental chondromalacia.
F

acial trauma with the necessary force to cause a frontal sinus fracture is commonly associated with base of skull and intracranial injuries.1 The management objective in these fractures is to avoid potential complications while attempting to restore adequate aesthetics and functional- ity. When surgical management is indicated, developments in endoscopic surgery have recently provided a treatment option less morbid than traditional sinus obliteration or cranialization.2 This report is in compliance with the institutional review board regulations of the University of Puerto Rico School of Medicine.

Case report
A 9 year-old male sustained multiple maxillofacial fractures after falling from a two-storey building. Frontal sinuses suffered a bilateral non-displaced linear fractures extending into the anterior and posterior walls. Magnetic resonance imaging (MRI) at this time showed a small encephalocele extending into the right frontal sinus. Operative repair was performed using an Endoscopic-Assisted Trephination approach.


Luis A. Tarrats MD-JD, Carlos Torre-León MD, Gustavo Almodóvar MD, Juan C. Portela MD

University of Puerto Rico School of Medicine, Department of Otolaryngology Head & Neck Surgery
Address: Jardines Metro II Apt. 12-E - San Juan, Puerto Rico (USA) 00927 - Email: luisamtarrats@gmail.com - Telephone: (787) 432-7338 - Fax: (787) 296-1641

Presented at the American Rhinologic Society at the American Academy of Otolaryngology Annual Meeting. Orlando, Florida September 20 / 2014

Abstracto
Un niño de 9 años sufrió múltiples fracturas maxilofaciales salvo caer de un edificio de dos plantas. Los senos frontales sufrieron fracturas lineares no-desplazadas que se extendieron a las tablas anterior y poste- rior. Un estudio de imagen por resonancia magnética demostró un en- cephalocele extendiéndose hacia el seno frontal derecho. La reparación quirúrgica fue realizada utilizando una técnica Endoscópica-Astistida por trepanación. Este es el primer caso publicado utilizando esta técnica en un niño.

Introduction
Facial trauma with the necessary force to cause a frontal sinus fracture is commonly associated with base of skull and intracranial injuries.1 The management objective in these fractures is to avoid potential complications while attempting to restore adequate aesthetics and functionality. When surgical management is indicated, developments in endoscopic surgery have recently provided a treatment option less morbid than traditional sinus obliteration or cranialization.2 This report is in compliance with the institutional review board regulations of the University of Puerto Rico School of Medicine.

Case report
A 9 year-old male sustained multiple maxillofacial fractures after falling from a two-storey building. Frontal sinuses suffered a bilateral non-displaced linear fractures extending into the anterior and posterior walls. The herniated brain parenchyma had been reduced spontaneously by cranialization or obliteration of the frontal sinus.5 Nonetheless, multiple reports of delayed complaints of chronic frontal pain and multiples reports of delayed mucoceles. In addition, for these procedures the morbidity of these procedures is significant with common complaints of chronic frontal pain and multiple reports of delayed mucoceles. In addition, for these procedures the morbidity of these procedures is significant with common complaints of chron
elimination procedures is possible with endoscopic techniques. The endoscopic assisted trephination approach provides excellent visualization and precise localization of the defect with appropriate space for instrumentation.

The opportunity for sinus preservation should be encouraged in children. If CSF leak is not present, current guidelines agree with a conservative approach to posterior table fractures with a displacement of less than 2 mm. Still, a sinus-intracranial connection can potentially cause a central nervous system infection with devastating consequences. This technique is a low morbidity procedure that should be balanced in consideration in patients with posterior wall injuries who do not have a clear surgical indication. Risks and benefits of the endoscopic-assisted trephination repair versus the potential intracranial complications of observational management should be thoroughly discussed. Frontal sinus fractures although rare represent a controversial and challenging management. The endoscopic assisted trephination approach is a feasible option for repairing frontal sinus posterior wall defects in children.

References

Abstract

Endoscopic Resection of a Posterior Nasal Septum Pleomorphic Adenoma

Luis A. Tarrats MD-JD, Carlos Torre-León MD, Gustavo Almodóvar MD, Juan C. Portela MD

University of Puerto Rico School of Medicine, Department of Otolaryngology Head & Neck Surgery

Address: Jardines Metro II Apt. 12-E - San Juan, Puerto Rico (USA) 00927 - Email: louisamtarrast@gmail.com - Telephone: (787) 432-7338 - Fax: (787) 296-1641

Presented at the American Rhinologic Society at the American Academy of Otolaryngology Annual Meeting, Orlando, FL September 20 / 2014

Case report

A 60 year-old female presented to our clinic with a two-year history of progressive nasal obstruction and one isolated episode of epistaxis that did not respond to medical treatment. Endoscopic evaluation revealed roundish, dumbbell-shape, smooth-surfaced, submucosal mass with prominent vessels of approximately 2 cm in the posterior nasal septum. A paranasal CT scan revealed a well-circumscribed oval shape mass (1.7 cm x 1.6 x 1.5 cm) arising from the posterior border of the bony nasal septum. The tumor was removed en-bloc with 1-centimeter free margins confirmed by intra-operative frozen sections through a completely endoscopic approach. Pathology results confirmed the diagnosis of a pleomorphic adenoma.

KEYWORD LIST: Nasal Septum, Pleomorphic Adenoma, Endoscopic

1. (A) MRI T2 A well-circumscribed and homogeneous mass that is hyperintense with homogeneous post-contrast enhancement. (B) Axial PNS-CT Oval shape mass (1.7 cm x 1.6 x 1.5 cm) arising from the posterior border of the bony nasal septum.
The decision was made to surgically resect this tumor through a completely endoscopic resection. The tumor was removed en-bloc with 1-centimeter free margins confirmed by intra-operative frozen sections (Figure 2). Adequate nasal support was maintained and there were no complications related to this procedure. Post-operatively the pathology results confirmed the diagnosis of a PA. On follow-up examinations since, the patient has remained asymptomatic and without evidence of recurrence for 8 months.

Discussion

PA is a mixed tumor composed of myoepithelial cells on a mesenchymal stroma. The epithelial cells are immunoreactive for cytokeratin and the myoepithelial cells to S-100 protein. MRI, which may help establish a preoperative diagnosis, shows as well-circumscribed and homogeneous mass that is hyperintense on T2 and hypointense in T1 with homogeneous post-contrast enhancement [1].

The predominant presentation is unilateral nasal obstruction followed by epistaxis and nasal deviation. Surgical management is recommended given PA malignant potential and risk of metastasis [2]. Lateral rhinotomy [3] have been the principal surgical approach for removal of these lesions, but endoscopic procedures have recently been successfully documented. With the development of endoscopic lenses, endonasal techniques have been growing in the management of nasal pathologies. Recent publications have described the feasibility of endoscopic resection of anteriorly-located nasal septum pleomorphic adenomas [4]. In our case the tumor was posteriorly located on the nasal septum, but similar endoscopic principles were applied and complete en-bloc excision was possible. Pleomorphic adenoma of the nasal septum can be endoscopically resected even when located posteriorly. However, even when the tumor is completely resected with free margins close surveillance is necessary [5]. After 8 months of follow-up with periodic nasal endoscopies our patient has not showed any evidence of recurrence.

References

Isolated Xanthoma Of The Sphenoid Sinus: A Rare Presentation

Gustavo J. Almodóvar-Mercado, MD, Carlos Torre-León, MD, José M. Busquets, MD, Luisam Tarrats MD-JD

University of Puerto Rico, School of Medicine, Department of Otolaryngology, Head and Neck Surgery, San Juan; Busquetsjose@hotmail.com, luisamtarrats@gmail.com. University of Puerto Rico Medical Sciences Campus - laryngology-Head and Neck Surgery Department - P.O. Box 365067 San Juan, PR 00936

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INTRODUCTION

Xanthomas are nonneoplastic granulomatous lesions composed primarily of lipid-laden macrophages accompanied by varying degrees of fibrosis, inflammatory reactions and cholesterol crystalloid depositions. [1] They are mostly associated with disorders of lipid metabolism in which abnormally high circulating levels of cholesterol are present. [2] Xanthoma formation commonly occurs on areas exposed to repetitive trauma like the Achilles and patellar tendons. Solitary xanthomas have rarely been observed in the head and neck area with most cases associated to the temporal bone surface. An English literature review revealed only 2 cases of paranasal sinus xanthomas, both associated to the maxillary sinus [2,3]. This is a case report of a 36-year-old Hispanic female with an isolated xanthoma of the sphenoid sinus. This report is in compliance with the institutional review board regulations of the University of Puerto Rico School of Medicine.

CASE REPORT

The patient is a 36-year-old Hispanic female with past medical history of Hashimoto’s hypothyroidism and family history of hypercholesterolemia. She was referred with a 1-year history of sporadic left sided epistaxis. She denied any history of trauma, facial pain, hypoesthesia, visual change, or symptoms of sinistus. Physical examination including nasal endoscopy was unremarkable.

A paranasal sinus Computed Tomography (CT) was performed revealing a soft tissue lesion infiltrating the posterolateral aspect of an expanded left sphenoid sinus. (Figure 1) Patient underwent endoscopic sinus surgery (ESS) with intraoperative findings of a yellow-tan, friable soft tissue mass filling the left sphenoid sinus. Biopsies were taken which exhibited histologically findings consistent with a xanthoma.

Conclusion: In a patient with hyperlipidemia isolated lesions on paranasal sinuses can be related to xanthoma formation.

Keywords: xanthoma; granulomatous lesion, sphenoid sinus; epistaxis

REFERENCES


RESUMEN

Objetivo: Presentar el primer caso en la literatura sobre un xantoma de esfenoides.

Método: Reporte de caso clínico.

Discusión: Una mujer de 36 años de edad con historial médico de hipotiroidismo y familia de hipertrofia simpática, presentó con epistaxis is esporádica unilateral del lado izquierdo. Una tomografía computarizada de los senos paranasales mostró una lesión de tejido blando infiltrando el seno esfenoidal izquierdo. Se realizó un esfenoiidoctomía endoscópica con identificación de una masa de tejido blando amarillenta y fríable en la cavidad. Se tomaron biopsias que histológicamente confirmaron un xantoma.

Conclusión: En un paciente con hiperlipidemia, lesiones solitarias en los senos paranasales pueden estar asociadas a la formación de xantomas. Este es el primer caso reportado en el cual la lesión presenta el seno esfenoidal.
Manati Medical Center Sepsis Management Epidemiological Study

Morales Serrano, Tamara, MD1, Ramos, Shirley, MD1, Lara Gonzalez, Yanira, MD1, Torres Colberg, Heileene, MD1, Vera Quiones, Alexis, MD2, Miranda Santiago, Roberto, MD1, Amil, Samuel, MD1, Otero, Marielys, MD1, Cintron, Viekia, MD1, DABFM and Villarreal Morales, Martha Lissette, PhD2.*

ARTÍCULOS ORIGINALES / ORIGINAL ARTICLE

Sepsis is defined as the combination of pathologic infection and physiologic changes known collectively as the systemic inflammatory response syndrome (SIRS) (1). One of the main challenges in sepsis treatment is its diagnosis, which is often made late with significant effects on patient outcomes. It has been estimated that there are more than 1,000,000 cases of sepsis among hospitalized patients each year in the USA (2). According to Artero et al., (3) the mortality rates range from 25-30% in severe sepsis and 40-70% in septic shock patients.

The high mortality rate of severe sepsis has led to the development of an international effort known as, “Surviving Sepsis Campaign (SSC) guidelines for management of severe sepsis and septic shock” (4). There has been progress in clinical management based on SSC guidelines. Several studies have shown that an Early Goal-Directed therapy (EGDT) can improve survival in severe sepsis and septic shock (5, 6, 7, 8). Rivero et al., 2001 found an in-hospital mortality of 30% in patients grouped to EGDT versus 46.5% in patients assigned to the standard therapy.

SSC guidelines recommended a group of evidence-base interventions related to the sepsis process executed together over an specific time frame. In 2012 the Resuscitation bundle was broken in two parts a 3 hours and 6 hours bundles. The first one to be completed within the first 3h includes: i) Blood lactate level, obtain blood cultures prior to administration of antibiotics, administer broad spectrum antibiotics and administer 30 ml/Kg crystalloid for hypotension or lactate ≥4 mEq/L, and ii) Two second part interventions: a) Apply vasoressors (for hypotension that does not respond to initial fluid resuscitation) to maintain a mean arterial pressure (MAP) ≥65 mm Hg, in the event of persistent arterial hypotension despite volume resuscitation (Septic Shock) or initial lactate ≥4 mEq/L (36 mg/dl) i) to maintain adequate central venous pressure ii) to maintain adequate central venous oxygen saturation, and iii) to re-measure lactate if initial lactate was elevated. These actions have to be completed within the first 6h of patient care (4).

The SSC campaign also recommended the use of lactate as a metabolic marker of high-risk patients. Hyperlactatemia is typically present in patients with severe sepsis or septic shock and may be secondary to hyperperfusion or other complex factors (4). The prognostic value of lactate levels has been well established in septic shock patients, particularly when its effects in addition blood lactate levels have been shown to have greater prognostic value (4, 9, 10, 11).

Another efficient index to assess the severity of sepsis in critically ill patients is the Acute Physiology and Chronic Health Evaluation II (APACHE II) scoring system. APACHE II uses a point score based on 17 variables related to the progression or reversal of organ dysfunction therefore it is a useful predictor of clinical outcomes and a guide to physicians in the management of patients (12, 13). When APACHE II scores are combined with an accurate description of disease, they can prognostically stratify mortality. This allows us to assist investigators comparing the success of new or differing forms of therapy (13).

Achieving improvements in the morbidity and mortality associated with sepsis and septic shock necessitated with severe sepsis requires the physician’s compliance to the SSC recommendations, early mobilization and identification of resources, and a multidisciplinary collaboration. Despite the widespread implementation of the SSC guidelines, they demonstrated that the degree of physician’s knowledge of the SSC management and its application compli- ance is often low (14, 15, 16). Current management of severe sepsis and septic shock at Manati Medical Center ED follows no specific protocols or recommendations. Therefore this study aims to verify the actual incidence and outcome of sepsis in Manati Medical Center.

MATERIALS AND METHODS

An observational epidemiological study was conducted in Hacienda HealthCare’s Manati Medical Center, Puerto Rico between October 1/2013 to October 31/2013. The study was retrospectively screened for SIRS, sepsis, severe sepsis and septic shock. This study was approved by the Ethics Committee of Manati Medical Center. Sepsis Campaign” guidelines.

Definitions

The sepsis and sepsis related concepts were evaluated according to the SSC (4), as follows:

- Sepsis: Systemic Inflammatory Response Syndrome (SIRS) is defined by two or more of the following criteria: temperature above 38°C or below 36°C, tachycardia (heart rate more than 90 beats/min), altered mental status, tachypnea manifested by a raised respiratory rate (more than 20 breaths/min), oliguria (urine output<0.5mL/kg/h), sedation GA score (GCS<15) and White Blood Cells (WBC)<4x10^9/L or >16x10^9/L or Persistent fever with new or worsening organ dysfunction (≥2 organ dysfunction).

- Sepsis plus an identifiable focus of infection.

- Septic shock is defined as sepsis with persistent hypotension (SAP<90 mmHg or MAP>60).

Statistical analysis

Primary and Secondary efficacy end points were In-hospital mortality and the organ-dysfunction criteria used by SSC criteria as means ± SD for variables that putatively exhibited a normal distribution and the non-normal hypothesis or for ordinal variables, we used the median and interquartile range (IQR). Student’s t-test for independent groups was applied to data with a normal distribution. If the normality hypothesis is rejected or ordinal variables are involved, the Mann–Whitney U-test was used for independent groups. For categorical variables the Pearson y2 test or Fisher’s exact test was applied as appropriate. A 95% confidence interval (CI) was used for the incidence calculations which was considered statistically significant.

RESULTS

During the six months study period there were 1,679 screened patients in our Institution. Of these, 619 were screened with ICD9 codes that met the medical data of the SSC 148 patients (2.4%) were identified with criteria for sepsis and/or sepsis related conditions. In the included patients 5 (4%) of SIRS criteria, 56 (38%) were cases of sepsis, 10 (7%) cases of severe sepsis and 25 (17%) of septic shock. It is noteworthy that 21 (14%) cases did not meet the clinical criteria used by SSC for the definition of sepsis and related conditions despite being coded as such. The incidence for Sepsis, Severe Sepsis and Septic Shock at Manati Medical Center ED were 1.7/1000 visits, 0.51/1000 visits and 0.32/1000 visits per 1000 screened ED admissions, respectively.
The main demographic and clinical characteristics of patients evaluated are shown on Table 1. The mean age was 61 years with a SD = 18.6; 67(58.8%) were female and 61(41.2%) were male with a median length of stay of 10 days. The APACHE mean value was 16.6 ± 6.8. The overall study mortality rate was 43.9% (65 cases). However, the mortality rate of patients with sepsis, severe sepsis, and septic shock increased progressively from 17.9% to 70%, respectively. As shown in Figure 1 the mortality rate also increased with age, from 10.5% among ≤44 years old to 88.7% in those >85 years old. The hospital setting where sepsis and related conditions were identified was 52.7% in ER, 35.1% in the medical ward and 11.5% in ICU. The primary sites of infection were 32.7% respiratory tract, 24.6% urinary tract and 17.6% skin/soft tissue and bone (Table 1). On the other hand, the more prevalent comorbidities among the patients were Hypertension (53.4%) and Diabetes Mellitus (40.5%) (Table 1).

As seen in Table 2, regarding the guidelines observance once severe sepsis and septic shock have been diagnosed the compliance with 3h-bundles was as low as 10.8%. The analysis of the components of the 3h-bundle showed that all the processes showed compliance superior to 60% except for the lactate determination. Broad spectrum antibiotics were used in all patients and in 77% of the cases blood cultures were collected prior to their administration. The correct use of IV fluids to correct hypotension that does not force the importance of the early protocols and SSC guidelines. On the other hand, the mortality rates for the severe sepsis and septic shock subgroups are higher than in the United States National estimates (19) and 24h Bundles. Our low compliance with the SSC bundles is considered with a high mortality rate associated in our Institution. The overall mortality rates observed in our current study are similar to the mean mortality rate (44.8 ± 7.8%, range, 55.0 to 29.3%) reported by several studies prior to implementation of EGDT protocol and SSC guidelines. On the other hand, the mortality rates for the severe sepsis and septic shock subgroups are higher than the United States National estimates (19) and those reported by a similar study in Puerto Rico (66%) (20). These findings are relevant due to the similar characteristics of the study population.

Regarding the demographic data of the patients in our study, the median age of patients is in the range of that reported in most studies, 60-69 years (3, 18, 19). A direct relationship between advanced age and the incidence of severe sepsis and septic shock was identified in our study. Similar results were observed elsewhere (3, 18, 19). In contrast to what was reported in several studies (1, 18, 20) we observed a higher incidence of sepsis and related conditions in men than in men. Male gender is related with a higher relative risk to develop sepsis (1, 3, 19) and it is unclear why there is this association. One possible explanation is due to a higher prevalence of comorbidities in men (19). However, we found that any underlying comorbidity occurred in 88.6% of cases. The most prevalent coexisting conditions in our study were hypertension and diabetes mellitus which is not surprising and reflects the major co-morbidities of the Puerto Rican population. Underlying disease with likely reduced life expectancy such as COPD had a statistically significant higher death rate, which is in line with other studies (3, 16, 19). Regarding the focus of infection, the respiratory tract was the main source in our study, followed by the urinary tract and skin/soft tissue and bone. Similar results have been previously reported (7, 16, 19).

Half of the sepsis and sepsis related cases in this study were initially identified at the ER which highlights the considerable burden of sepsis care in the ER. Our findings for agreement with published work in other studies (18,19) in which the community-acquired infections is in line with other studies (3, 16, 19). Regarding the focus of infection, the respiratory tract was the main source in our study, followed by the urinary tract and skin/soft tissue and bone. Similar results have been previously reported (7, 16, 19).

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RESUMEN

Sepsis es definida como la combinación de infección y cambios fisiológicos conocidos como Sín- done de Respuesta Inflamatoria Sistémica. Menores tasas de mortalidad y mejores resultados para los pacientes se han visto en aquellos a los que se les ha administrado un tratamiento de sepsis con éxito. Actualmente, nuestra Institución no sigue un protocolo específico obligatorio para el manejo de sepsis. Este estudio tuvo como objetivo verificar la incidencia y evolución de la sepsis en el Manati Medical Center. Se realizó un estudio retrospectivo de pacientes ingresados en el Departamento de Emergencia durante el mes de mayo del año 2013. Se encontró una incidencia de sepsis de 15,99% con una tasa de mortalidad de 3,09%. Los principales factores de mortalidad fueron los relacionados con la gravedad de la sepsis en sí misma.

CONCLUSIÓN

Sepsis y sepsis relacionadas con un signo de aumento en impacto en la salud pública. El aumento de la población y la incidencia de sepsis es un problema de salud pública que requiere una atención adecuada. La implementación de estrategias de mejora de la atención y la educación del personal médico es necesaria para mejorar los resultados de los pacientes con sepsis.

Luis Rodriguez-Ospina MD1, Juan Garcia-Morell MD1, Carla P. Rodriguez-Monserrate MD1, Julio Valentín-Nieves MD1

1 From the Departments of Cardiology and Internal Medicine, Veterans Affairs Hospital, Caribbean Health Care System, San Juan Puerto Rico, USA

Address reprints requests to: Luis Rodriguez-Ospina, MD, VA Caribbean Healthcare System, San Juan, Department of Cardiology PO Box 70898 10 Casas Street San Juan Puerto Rico 009251 E-mail: Luis.Rodriguez-Ospina@va.gov

Introduction

Aortic valve replacement (AVR) is the well-established treatment for patients with severe aortic valve stenosis (AVS). Over the past 40 years, a large variety of prosthetic valves have been developed with the aim of improving hemodynamic function, increasing durability, and reducing complications. Nevertheless, no ideal valves and all prosthetic valves are prone to dysfunction. By their design almost all replacement valves are obstructive compared with normal native valves. The degree of the obstruction varies with the type and sizes of the valve. Thus, it may be difficult to differentiate obstructive hemodynamic due to own valve design from those of mild obstruction observed with pathologic changes from patient-prosthesis mismatch (PPM). Patient-prosthesis mismatch (PPM) after aortic valve replacement (AVR) occurs when the effective orifice area (EOA) of the implanted prosthesis is insufficient for the cardiac output, leading to residual trans-valvular gradients. Several reports regarding PPM in aortic stenosis have been published since 1978 (2). PPM is a frequent occurrence (20% to 70%) of aortic valve replacement that has been shown to be associated with worse hemodynamic, less regression of left ventricular hypertrophy, more cardiac events, and lower survival (3). The significant is that as opposed to other risk factors, PPM can largely be prevented by using a prospective strategy at the time of operation.

We discuss a case that presented prosthesis mismatch after AVR and a literature review of PPM.

Clinical Case

A 78 years-old male with a past medical history of arterial hypertension, hyperlipidemia, obstructive sleep apnea, chronic obstructive pulmonary disease, chronic kidney disease stage 5 and severe aortic stenosis that came for evaluation due to symptoms of shortness of breath (SOB) for the past several months. He underwent complete workup for aortic valve replacement. Transthoracic echocardiogram revealed: severe aortic valve stenosis, mild aortic valve regurgitation, a severely calcific left ventricular hypertrophy. The left ventricular ejection fraction and wall motion were normal. The transmitial spectral Doppler flow pattern was suggestive of pseudonormalization. The right ventricular systolic function is normal. The left atrium is severely dilated. Doppler findings do not suggest right ventricular hypertrophy.

Aortic valve was severely calcific, sclerotic, restricted and stenotic with a mean gradient: 47 mmHg, Ao v2 max: 475.4 cm/sec Aortic (Ao) max Peak Gradients (PG): 30.9 mmHg Ao v2 mean: 309.0 cm/sec Ao mean PG: 45.5 mmHg AVA(ID): 0.89 cm² (see figure.1). Also there was mild to moderate aortic regurgitation, VC: 0.36 cm² PHT: 569 ms.

Index Terms: Patient Prosthesis Mismatch, aortic valve replacement, stenosis, di-mensionless index

Abstract

Valve replacement is the standard surgical treatment of diseased valves that cannot be repaired. The main goal of replacement is to exchange the diseased valve with one that has the engineering and hemodynamics as close as possible to the disease free native valve. However, mechanical and fluid dynamic constraints all prosthetic heart valves (PHVs) are smaller than normal and thus are inherently stenotic. This represents a challenge when it comes time to replace a valve. The correct valve with the correct and matching profile has been protected before the procedure to avoid possible complications. It is well recognized that patients are also prone to patient-prosthesis mismatch at long term which could have consequences in the clinical outcomes. The evaluation of patient-prosthesis mismatch (PPM) has not been sufficiently emphasized in common practice. Failure to recognize this fact can lead to significant hemodynamic impairment and worsening of the clinical status over the time.

Making efforts to identifying patients at high decrease the prevalence of PPM, the economic impact to our health system, the health system, the health system, and the cost. In the past several months, he underwent complete workup for aortic valve replacement. Transthoracic echocardiogram revealed: severe aortic valve stenosis, mild aortic valve regurgitation, a severely calcific left ventricular hypertrophy. The left ventricular ejection fraction and wall motion were normal. The transmitial spectral Doppler flow pattern was suggestive of pseudonormalization. The right ventricular systolic function is normal. The left atrium is severely dilated. Doppler findings do not suggest right ventricular hypertrophy.

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In view of the previous hemodynamic results from the prosthesis valve, a fluoroscopy was performed. Patient received a mechanical prosthetic valve, Carbomedics 21mm. Postoperative echocardiogram revealed a mean gradient of 35.9mmHg, Dimensionless Index 0.36, Effective Orifice Area (EOA) 1.27cm², Index EOA 0.63cm²/m². In the following months, patient had several admissions to the hospital for SOB.

On the last admission, in addition to shortness of breath patient presented with productive cough, blood-streaked sputum, lower extremity edema. The vital signs on admission were within normal limits. Physical examination presented with metallic S2, SEM late peaking, jugular venous distension (JVD) at 45 degrees, bilateral coarse cracks up to 2/3 of lung fields and bilateral lower extremity edema. Physical examination was consistent with a patient in acute heart failure.

The echocardiogram demonstrated left ventricular hypertrophy with a chronic right bundle branch block and sinus bradycardia. The cardiac enzymes were negative but the Pro-Brain Natriuretic Peptide (Pro-Bnp) found elevated 9057ng/ml to his baseline (less than <2,000ng/ml). In view of current findings, prosthesis valve dysfunction was suspected. The echocardiogram was repeated and the results revealed a well-functioning prosthesis with a continuous wave Doppler evaluation demonstrating a severely calcific, sclerotic and restricted aortic valve and with a continuous wave Doppler evaluation demonstrating parameters consistent with severe aortic stenosis.

Discussion

Aortic valve stenosis affects more than 2% to 4% of older adults and is the most common reason for valve surgery. Aortic valve replacement (AVR) is the well-established treatment for patients with severe aortic valvular stenosis (AVS). The introduction of valve replacement
surgery was in the early 1960s (2). The current techniques and available tools have dramatically improved the outcome of patients with valvular heart disease. Approximately 90,000 valve replacements are now implanted in the United States and 280,000 worldwide each year (2). A variety of prosthetics and biological valves has been invented with the goal to be comparable to a normal human valve (2). However, this problem has not received much emphasis and should be considered before the indications for valve replacement are broadened. PPM is a frequent occurrence (20% to 70% of aortic valve replacements) (4). Most of the prosthetic valves are limited by the effective Orifice Area indexed (EOAi) of 0.79 cm²/m². Our patient had a smaller body surface area and aortic annulus (7).

For example, our patient had a weight of 188lbs (85.5kg) and height of 68 in (172.7cm). The calculated BSA was 1.99 thereore the EOA to avoid PPM was 1.7cm², with a calculated indexed EOA of 0.79 cm²/m². Our patient received a Caromedics 21mm which has an EOA of 1.5cm² with a calculated EOAi of 0.75 cm²/m². The optimal Caromedics prosthetic to avoid PPM should have been a 25mm which has an EOA of 1.8cm² and a EOAi of 0.94 cm²/m². Therefore, it’s important to emphasize the need to perform a preoperative evaluation taking in consideration the patient’s body size and the current conditions prior to the surgery in order to prevent further complications; such as in our case that patient developed worsening hemodynamics leading to heart failure (8). Although the process of valve replacement has its own complications some of them are avoidable. As physicians, we must take an active role in recommending our surgeons which type of prosthesys to use in order to prevent PPM. Also, proper follow up and workup should be performed in each and every patient who is referred for AVR, which should include an echocardiogram pre and post operatively.

References

Acknowledgments
Special thanks to the cardiology staff and the echocardiography technicians of VA Caribbean Health Care System.
Surviving Sepsis Puerto Rico: A Call For Action

Ronald Vigo MD*, Miguel Laforet Matos MD**, Tamid Turbay MD*

*Mayagüez, Medical Center, Internal Medicine Department, Mayagüez, Puerto Rico 00680. - Email: tvigo@gmail.com
**Corresponding authors.

Rivers et al published in The Treatment of Severe Sepsis and Septic Shock”. EGDT demonstrated a 16.5% decrease in mortality in septic patients (4). In 2006 Fernandez et al. evaluated the implementation of Surviving Sepsis Campaign in Puerto Rico. A validated questionnaire assessing physicians from medical specialties correctly identified SIRS criteria (11). This article evaluated physician’s knowledge regarding the topic in Puerto Rico. The validated questionnaire was distributed among physicians in general medicine and internal medicine along with subspecialties from public and private hospitals across the entire island. (12) from the activation of the inflammatory cascade will be triggered in response to a medical emergency and outcome are highly dependent on the time that treatment is administered.

In order to understand the importance of the Surviving Sepsis Campaign bundles that need to be completed within the first 3 hours of the pathophysiology of sepsis syndrome (13) when our body is exposed to infectious stimuli, cytokines and complement will be released. 

**DISCUSSION**

In the early stages of sepsis patients may have WBC (White Blood Cell) counts greater than 15,000. This is an important tool in the early management of the septic patient. Emphasis is placed on physicians in emergency rooms who are responsible for early identification and management of sepsis. Sepsis is without a doubt a medical emergency and outcomes are highly dependent on the time that treatment is administered.

Clinical judgment is important, as both young and elderly patients may not manifest with typical symptoms. Hypoxemic patients and patients on beta-blockers or calcium channel blockers may have a delay in presentation, and may even have associated bradycardia (14).

It is intended as a supplement to published guidelines with SIRS criteria. Our goal is to educate physicians on the importance of early identification and treatment of the septic patient. A recent 2016 survey showed that awareness and improve care is essential and we propose treatment protocols for our Puerto Rican hospitals to help reduce morbidity, mortality, length of stay and costs.

**Key Words:** Sepsis, Sever Sepsis, Septic Shock, Early Goal Directed Therapy, Surviving Sepsis Campaign, SIRS, Sepsis Bundle, Lactate and Mixed Venous.

| Table 1 |
| To be completed within 3 hours |
| 1 Measure lactate level |
| 2 Obtain culture prior to administration of antibiotics |
| 3 Administer broad spectrum antibiotics |
| 4 Administer for hypotension or lactate > 4 |
| To be completed within 6 hours |
| 5 Apply Vasopressors (for hypotension that do not respond to initial fluid resuscitation) (to maintain mean arterial (MAP) > 65 mm Hg) |
| 6 In the event of persistent arterial hypotension despite volemic resuscitation (Sepsis shock) or lactate > 4 mmol/L (mg/dL) - Measure Central venous pressure (CVP) |
| - Measure Central venous oxygenation (ScvO2) |
| 7 Remembrance of shock at intake in the patient in shock: SIRS + shock + sepsis, and get the help! |

**SIRS** Criteria include:

1. Fever of more than 38°C (100.4°F) or less than 36°C (96.8°F)
2. Heart rate of more than 90 beats per minute
3. Respiratory rate of more than 20 breaths per minute or arterial carbon dioxide tension (PaCO2) less of than 32mmHg.
4. Abnormal white blood cell count (>12,000/μLor<4,000/μL or >10% immature [band] forms)

Patients in the early stages of sepsis may have WBC (White Blood Cell) counts greater than 15,000. This is an important tool in the early management of the septic patient. Emphasis is placed on physicians in emergency rooms who are responsible for early identification and management of sepsis. Sepsis is without a doubt a medical emergency and outcomes are highly dependent on the time that treatment is administered.

Clinical judgment is important, as both young and elderly patients may not manifest with typical symptoms. Hypoxemic patients and patients on beta-blockers or calcium channel blockers may have a delay in presentation, and may even have associated bradycardia (14).

It is intended as a supplement to published guidelines with SIRS criteria. Our goal is to educate physicians on the importance of early identification and treatment of the septic patient. A recent 2016 survey showed that awareness and improve care is essential and we propose treatment protocols for our Puerto Rican hospitals to help reduce morbidity, mortality, length of stay and costs. Therefore, in 2001, Rivers et al. in 2006, only an alarming 31.4% of doctors from different specialties correctly identified SIRS criteria. Our goal is to educate physicians on the importance of early identification and treatment of the septic patient. A recent 2016 survey showed that awareness and improve care is essential and we propose treatment protocols for our Puerto Rican hospitals to help reduce morbidity, mortality, length of stay and costs.

The goal was to reduce worldwide severe sepsis and septic shock related mortality by 25% in the next 5 years through a Joint agenda that included: building awareness of sepsis, improving diagnosis, increasing the use of appropriate treatment, educating healthcare professionals, improving post-ICU care, developing early identification and management, knowledge regarding the topic in Puerto Rico. In 2002 the Surviving Sepsis Campaign began as a collaboration between the Society of Critical Care Medicine and European Society of Intensive Care Medicine with goals of reducing worldwide sepsis mortality by 25% in the next 5 years. Despite the prov-

In 2004 a data collection tool was developed and the first guidelines for identification and treatment were published. By 2010 publishing a total of 13 questions addressing our body is exposed to infectious stimuli, cytokines and complement will be released. Careful evaluation of breathing patterns is necessary. Shallow breathing patterns may lead to underestimate tachypnea while some patients may have already fatigue due to increase in breathing work and present hypopnea. Submitting patients to this type of stress response can be compared to exposing them to car-diore-sis or renal failure and healthy patients may tolerate spending more time at this stage before other organ dysfunctions. However, older patients with pre-existing disease cannot tolerate prolonged...
Sepsis must be at the top of considerations when determining a differential diagnosis when older or immunocompromised patients present with any of these symptoms. The second stage of shock can be identified by the Severe Sepsis Criteria (Table 2). This second stage results from organ damage due to a septic state as a result of poor oxygenation. Shock is defined as a medical emergency in which the body is not receiving adequate blood flow. It is important to remember that critical organ hypoperfusion can be occurring in a patient who presents with normal vital signs. In Rivers' trial 10% of patients with normal vital signs had normal blood pressures. In Rivers' trial 22% of patients presenting with normal vital signs had normal blood pressures. In Rivers' trial 10% of patients with normal vital signs had normal blood pressures. In Rivers' trial 22% of patients presenting with normal vital signs had normal blood pressures.

In a study by Kumar et al, administration of antibiotics prior to the initial 6 hours of documented hypotension was associated with a 4.7% improvement in mortality. Each subsequent hour after the initial 6 hours of documented hypotension and have lactate levels of ≥2 mmol/L will increase mortality (21).

One possible etiology for this presentation is the presence of metabolic acidosis. Lactic acid is accumulated in the kidneys leading to underestimation of the anion gap. Past levels are far from being the main determinant of hypoperfusion in elderly patients (particularly the elderly) may also present with elevated lactate output and have lactate levels of ≥2 mmol/L. This means that errors and beta agonists can decrease elevated levels. Tissue lactate levels should be interpreted with care in these situations. Pediatric patients with hepatic failure may also have increased levels related to decreased clearance. Efforts should be done to make the test available with a rapid turnaround time in all hospital laboratories. Baseline deficit of -5 to -10, high anion gap metabolic acidosis, low bicarbonate values, and mixed acidosis associated with acidemia of ≤65% may be helpful for identification in hospitals where lactate cannot be measured with a rapid turnaround time.

To obtain Blood Cultures Prior to Administration of Antibiotics. When treating a septic patient, obtaining blood cultures for susceptibility testing is useful. These are the most effective fluids for intravascular expansion (24). Albumin solutions are expensive and make the vascular compartment. The body responds by releasing anti-diuretic hormone, endogenous vasopressin, in response to decreased perfusion to organs and tissues. Anaerobic metabolism, hence acidosis, will decrease oxygen saturation and hemoglobin. Consequently, this may result in decreased need for vasopressors but determination of need for vasopressors should be made by institutions to allow for adequate resuscitation therapy is provided with subsequent re-measurement until a lactate level of ≥2 mmol/L is obtained. It is emphasized that a single abnormal value is useless if the test is not repeated subsequent to fluid and vasopressor interventions. Endpoints of resuscitation are dependent on the individual patient including cardiac output, oxygen saturation and hemoglobin. Consideration should be given to providing packed red blood cells for hematocrits of <30% and oxygen for ≥95% saturation on pulse oximetry or arterial blood gases.

Isotonic crystalloid solutions such as Ringer’s Lactate and 0.9% Normal Saline should be used as these are the most effective fluids for intravascular expansion (24). Albumin solutions are expensive and make the vascular compartment. The body responds by releasing anti-diuretic hormone, endogenous vasopressin, in response to decreased perfusion to organs and tissues. Anaerobic metabolism, hence acidosis, will decrease oxygen saturation and hemoglobin. Consequently, this may result in decreased need for vasopressors but determination of need for vasopressors should be made by institutions to allow for adequate resuscitation.

It is essential to establish endpoints prior to starting fluid resuscitation. Extensive edema secondary to aggressive resuscitation has been associated with increased in ventilator days, abdominal complications and due to the glycolytic pathway resulting in increased capillary leakage. Finding the right balance between adequate hydration and over hydration is essential to increasing preload. Preloading is essential to increasing preload. Preloading is essential to increasing preload. Preloading is essential to increasing preload.

When using resuscitation endpoints, an initial value is measured and repeated at 60 to 90 minutes. When therapy is provided with subsequent re-measurement until a lactate level of ≥2 mmol/L is obtained. It is emphasized that a single abnormal value is useless if the test is not repeated subsequent to fluid and vasopressor interventions. Endpoints of resuscitation are dependent on the individual patient including cardiac output, oxygen saturation and hemoglobin. Consideration should be given to providing packed red blood cells for hematocrits of <30% and oxygen for ≥95% saturation on pulse oximetry or arterial blood gases.

Bundle Elements within 6 hours (See Algorithm): O’Neill et al evaluated which components of treatment were more difficult to implement in their community-based emergency department. They found that arterial line placement; central venous oxygen saturation and central venous pressure were the most difficult elements of EGD to implement (22). We believe arterial line placement is the hardest to implement in emergency rooms given the expertise necessary to access central veins.

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If lactate levels can be measured with a rapid turnaround time of less than 30 minutes it may become a useful tool for evaluating need for admission, predicting mortality and guiding therapy in emergency rooms.

CONCLUSIONS

Early identification and utilization of EGDT in emergency rooms can help reduce morbidity, mortality, length of stay and costs (5-7, 33). Skeptics may argue that the newly published ProCESS trial will lead to an end of the EGDT era. This study, however, evidences that invasive monitoring is not necessary for adequate management of septic patients. All of the elements in the initial 3 hour bundles were met in the management of patients included in Process. Compliance with these bundles in clinical settings can be increased if awareness is raised towards the importance of timely identification and treatment. Antibiotic protocols and stewardship programs may facilitate appropriate IV antibiotic selection.

An educational campaign to increase awareness and improve care in our hospitals is essential. We believe that sepsis identification and management training could be incorporated into current Dengue fever training requirements for licensing. Dengue fever and Dengue Hemorrhagic Shock are essentially systemic inflammatory responses and as such they share many pathophysiological similarities to Sepsis. Of note is the fact that many of the recommendations offered in guidelines for the management of Dengue come from publications prior to institution of Surviving Sepsis Guidelines (34). We believe the same principles of fluid management and resuscitation presented in the Surviving Sepsis Guidelines is applicable to management of Dengue Fever. Areas of future interest include comparison of current Dengue fluid management recommendations to an EGDT.
strategy. Sepsis screening tools and treatment protocols may be useful for patient identification and have been key factors for implementation in various hospitals (6, 35). Such examples can be found in the Surviving Sepsis Campaign’s webpage at www.survivingsepsis.org. Antibiotic selection checklists can also help with appropriate antibiotic selection and may reduce selection errors.

Mechanisms to measure quality and future treatments regarding EGDT use in our hospitals should be important long term goals. Sepsis is without a doubt a costly and dangerous disease; we need to arm ourselves with the correct tools in order to prevent major morbidity and mortality from it.

REFERENCES


### Dengue Fever: A Rare Cause Of Immune Thomboctopenia*

Tania Ramirez-Fonseca, MD, Amaury Segarra-Torres, MD, Francisco Jaime-Anselmi, MD, FACP, José Ramirez-Rivera, MD, MACP

Department of Internal Medicine, Hospital de la Conquista, San Germán, Puerto Rico Corresponding author: Tania Ramirez Fonseca, MD. Address: 4030 Villa Ramirez, Mayaguez, PR 00682 email: taniaramirez05@hotmail.com. Presented in part at the American College of Physicians, Puerto Rico Chapter Clinical Vignettes Competition, December 8, 2013.

*Award winner in the 2014 National Hispanic Medical College Meeting, Orlando, Florida, April 11, 2014.

**Immune thrombocytopenia (ITP) is a rare autoimmune disorder. It usually occurs 1-4 weeks after a viral infection and may be seen occasionally after vaccination (1). ITP in adults is usually chronic and rarely associated with viral infections (2). ITP is usually associated with HIV, hepatitis C, varicella-zoster virus, rubella, influenza, Epstein-Barr virus, and bacteria. The latter is rare, but dengue is very uncommon, and dengue is very seldom. In 2005, the World Health Organization declared dengue a "global threat" and called for a reduction in morbidity and mortality from dengue. The World Health Organization (WHO) has estimated the number of cases of dengue to be 1.7 million annually, making this the second most common arboviral infection.**

#### CASE PRESENTATION:

A previously healthy 23-year-old woman from Puerto Rico was brought to the emergency department with a tourniquet test showed 30 petechiae per square inch.

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**51**
The first classic clinical description was by Gottlieb Werhof (1699–1767), a German physician and poet Paul Gottlieb Werhof (1699–1767), a German physician and poet. Thrombocytopenia results from a decrease in the production of platelets and from a decrease in the destruction by the spleen, may be considered if severe thrombocytopenia is not due to no correlation between the onset is often insidious. Twice a year, half of these cases occur in adults. Adult-onset and childhood-onset ITP are strikingly different. Aged children are typically healthy, and usually present with the sudden onset of purpura and or purpura 1-2 weeks after a viral infection. The illness is usually self-limited and resolves spontaneously. In contrast, ITP in adults is generally chronic, and the onset is often insidious. Twice as many women as men are affected (7).

Thrombocytopenia results from both a reduction in the production of platelets and from a decrease in their half-life (2). (Auto)antibodies directed against the platelet membrane, such as anti-glycoprotein IIb/IIIa, anti-glycoprotein Ib, anti-glycoprotein VI, anti-glycoprotein IIb/IIIa, or anti-glycoprotein IIb/IIIa, can lead to platelet dysfunction and thrombocytopenia. It is important to distinguish post dengue ITP from dengue hemorraghic syndrome (DHS). The thrombocytopenia in dengue is not a direct consequence of the virus, but rather the host response to the virus. The illness is short-lived and platelet counts recover with the patient’s clinical improvement. Haemorrhagic phenomena are usually observed in the early female phase and are characterized by moderate to marked thrombocytopenia with widespread cutaneous and mucosal bleeding. In our case, there was an initial suspicion of DHS but was exclud ed by the clinical course and the absence of hemorrhagic phenomena and fe bri phase which is classically ob served in the illness. Intravenous immune globulin (1 g/kg/day for 2 to 3 consecutive days) is used for treating internal bleeding when the platelet count is less than 5,000 cells/mm³, or when there is progressive or ex tensional purpura. Platelet transfusions may also be used in severe bleeding when the platelet count is less than 20,000 cells/mm³. Thrombocytopenia should only be considered if severe thrombo cytopenia persists. There is insufficient evidence to support the routine use of anti-platelet, anti-thrombotic, and anti-nucleic antibodies (7,8).

CONCLUSION:

ITP in adults is usually chronic and idiopathic, however, as could be seen in the present case, it may occur in an acute form following a viral infection. Clinicians must consider post dengue ITP in adult patients presenting low platelet counts. ITP is associated with a few days or weeks after a dengue virus infection.

REFERENCES:


Asociación Médica de Puerto Rico

La Asociación Médica de Puerto Rico es fundada en el año de 1902, cuando por aquel entonces, el ilustre doctor Manuel Quesado Báez se sirvió de la necesidad de aglutinar a la profesión médica puertorriqueña en un núcleo de profesionales que defendieran la colectividad de la ciencia y el arte de la medicina y el mejoramiento de la salud del pueblo de Puerto Rico. Tras versar sobre particulares dificultades e inconvenientes naturales de la época, se celebró la asamblea constituyente el día 21 de septiembre de 1902, en el salón de sesiones de la Cámara de Delegados en la ciudad de San Juan.

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RESUMEN:

La trombocitopenia inmune es una enfermedad rara caracterizada por una disminución en el conteo de plaquetas y hemorragias cutáneas-mucosas. En adultos es usualmente idiopática y crónica. En niños puede ocurrir en fase aguda después de una infección viral. El virus dengue ha sido raramente reportado como causa de trombocitopenia inmune. Reportamos el caso de una mujer joven en el presente con trombocitopenia inmune luego de una infección con dengue.

Objetivos

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**Metabolic Correction as a tool to improve diabetes type 2 management**


**Abstract**

Diabetes Mellitus type 2 (DM2) is a metabolic disease that develops by a decrease in sensitivity of insulin receptors as an effect of the disruption of certain metabolic functions in the processing of glucose in the body. DM2 patients have uncontrolled glucose levels, and commonly have problems with obesity and cardiovacular disease. Patients are treated with standard diet, insulin, diabetic oral agents and antihypertensive drugs, but this approach does not completely stop tissue deterioration since it does not address the metabolic root of the disease. Metabolic correction is proposed as an alternative to improve patients’ health. Metabolic correction is based on diet modification, proper hydration and scientific supplementation directed to improve cellular biochemistry and metabolic efficiency. In addition, other possible benefits may include reduction in medication use, disease complications and medical costs. To test the results of a metabolic correction protocol with DM2 patients, an educational program about adequate food consumption that promoted control of blood glucose levels, anthropometric measurements and blood tests was performed during a 13 week program based on a low carbohydrate diet, proper hydration and magnesium supplementation. The metabolic correction program implemented by a proprietary 50 minute audio-visual educational protocol and supervised doctor who focused on having each one of them fully understand the specific hormones that affect the patient’s metabolism.

**INTRODUCTION:**

Diabetes is defined as a metabolic disease, implying that the body’s ability to control the red blood cell energy producing capacity is disrupted in diabetes (1). Diabetes Mellitus has been linked to be related obesity component (Metabolic Syndrome) have continued to increase in incidence costs (2) (3) (4). According to the American Diabetes Association (ADA) (5) that weightiness of 85% of Type 2 diabetics are affected by obesity so these two conditions DM2 and obesity appear to be intimately related (5) (6).

While analyzing and summarizing the average weight loss results of 30,642 subjects who had received counseling services on an established medical supervised weight loss program, it was noticed that the average participant had lost an average of 11 pounds with their educational protocol during a 5 year period. This weight loss program was developed based on a science metabolism enhancing protocol and patient education. The customer/patient education program was based on reducing dress sizes while improving their health and energy levels. As a result, it is steered approach patient’s weight loss customers desired. It was found that their educational program included anthropometric measurements that reflected an average waist circumferences (WC) reduction of 5 inches (from 38" average to 33" average) on these participants. It was also noted that the average participant lost most to this weight loss program had remained on their program for an average of 13 weeks. Since WC reduction has known potential cardiovascular risks benefits (7) (8) (9), a small pilot study was conducted to determine the impact of the program in various anthropometric data of waist circumference. Improvements in these values could represent an important reduction of coronary heart disease risk factors as well as other chronic degenerative diseases. In addition there was medication dosage reduction in one or more medications in 21 of the 25 participants, which suggest that the program has the potential to improve health outcomes and reduce health care costs.

**Results:**

The creator of this weight loss program, himself an ex-obese and formerly pre-diabetic patient had implemented the educational protocol and scientific literature for solutions to his own life-long obesity problem. After having achieved health risks and weight loss efforts if any changes in their diet and exercise. Weight loss and low-fats dieters successfully he had personally succeeded by focusing on three main factors: 1) the metabolic enhancing properties of certain food types and proper hydration, in 2) the specific hormonal effects of different food types and in 3) different food ingredients to select for each person’s diet based on their autonomic nervous system predominance as either parasympathetic or sympathetic dominance.

Through its first 10 years of existence this weight loss program had supportedDM2 patients rapidly to several branch offices and later to other countries as a franchise system to improve DM2 patient’s lifestyle. The rapid expansion was being caused by their customers/patients above average weight loss results.

A well-known characteristic of DM2 is the fact that even moderate weight loss will improve DM2 control over time. There are significant anthropometric measurements that reflect an average waist circumference reduction in 5 inches (from 38” average to 33” average) on these participants. It was also noted that the average participant lost most to this weight loss program had remained on their program for an average of 13 weeks. Since WC reduction has known potential cardiovascular risks benefits (7) (8) (9), a small pilot study was conducted to determine the impact of the program in various anthropometric data of waist circumference.

**Metabolic Correction and Patient Education via the MRT-MD Protocol**

An educational metabolic restorative technology (MRT) protocol program, the Metabolic Restorative Technology Medical Protocol (MRT-MD) was used on 25 DM2 patients for 13 weeks. The purpose of this study was to evaluate the short term potential of the MRT-MD approach in terms of clinical results as reflect on the patients by measures of fasting blood glucose, lipid profiles on Triglycerides (TG) and Cholesterol (CH) as well as anthropometric data of waist circumferences (WC) and body weight. It was expected that any changes in their medication needs and any medical cost reductions obtainable through the method’s life style and diet education component. The weight was measured using a digital scale (TBF–310GS Body Composition Analyzer digital scale). A paired one-tailed t-test was performed to ascertain whether the diet was effective in reducing the levels of the variables studied (Table 1). The data for the variable weight was normalized using a log transformation.

**Methods:**

As a result of these previous observations and results on the weight loss program, a small study was conducted and executed under medical supervision for 13 weeks.

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**Correspondence address/request for reprints:** Dr. Jorge R Miranda-Massari - Email: jrmr@upr.edu

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**BOLETIN** Médico Científico de la Asociación Médica de Puerto Rico | BOLETIN Médico Científico de la Asociación Médica de Puerto Rico
carbohydrates (bread, pasta, potatoes, etc.) and non-starchy carbohydrate sources (lettuce, etc.). The importance of proper dietary hydration based on each participant’s own body weight was also stressed in the study.

The MRT-MD protocol delivers a one-time 50 minute audio-visual graphic presentation providing patient education. Experience at the weight loss program where the first 13 weeks leg of the study involved in a metabolic correction nutrition and supplementation educational protocol; magnesium was identified to play an important role in lowering the insulin resistance that is characteristic of DM2. Previous research also confirmed that magnesium deficiencies strongly aggravate hyperinsulinemia and compromise the efficiency of cellular insulin receptors and thus played an important role in controlling both diabetic and obesity with the added benefit in assisting in lowering hypertension (41) (42) (43). Thus, at the start of the study all DM2 patients are asked to supplement daily with magnesium on a “bowel tolerance dose” individual dosage basis. Magnesium supplementation also helps the DM2 patients enjoy their sleep quality which in turn helps them with the weight loss and glucose control efforts (44) (45) (46) (47). Magnesium supplementation seems to have some potential in reducing medication needs (insulin, diabetic oral agents and antihypertensive drugs) and reduce medical management costs in general (48) (49) (50) (51) (52) (53).

Results:
This preliminary study showed an average weight loss of 4.8 kgs (10.6 pounds) per participant. The fasting blood glucose measurements was reduced by an average of 39.4 mg/dl, triglycerides were reduced an average of 35 mg/dl, cholesterol was reduced by 7.6 mg/dl, and waist circumference was reduced by an average of 4.2” on this metabolic correction nutrition and supplementation educational protocol of 13 week duration. (see Table 1)

Table 1

<table>
<thead>
<tr>
<th>Protocol</th>
<th>Metabolic Correction Program</th>
<th>Improvement in First 13 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight (U)</td>
<td>2058</td>
<td>249.9</td>
</tr>
<tr>
<td>Weight (F)</td>
<td>2218</td>
<td>214.7</td>
</tr>
<tr>
<td>Weight combined</td>
<td>2335</td>
<td>2229.9</td>
</tr>
<tr>
<td>Blood glucose (U)</td>
<td>100</td>
<td>99.1</td>
</tr>
<tr>
<td>Blood glucose (F)</td>
<td>115.1</td>
<td>111.7</td>
</tr>
</tbody>
</table>

Table 2

<table>
<thead>
<tr>
<th>Paired Samples Test (Table 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>50.00</td>
</tr>
</tbody>
</table>

The mean was significantly greater than 0 for all the variables in the study providing evidence that the MRT-MD protocol was effective in producing a reduction in the levels of all the p < 0.05. (see Table 2)
A pilot study conducted to evaluate the results of a science based nutritional and supplementation program implemented in 25 DM2 patients under medical supervision for 13 weeks. The metabolic correction diet and supplementation program implemented by a proprietary nutritional and medical system consisting of significant or very significant reductions in glucose, triglycerides, waist circumference, weight, and waist circumference. Improvements in these values could represent an important contribution to the management of heart disease risk factors as well as other chronic degenerative diseases. These results warrant larger studies with methodology as it may represent an important contribution to chronic reduced morbidity and mortality in diabetic type 2 patients. The fact that these results were obtained while decreasing one or more medications in 21 of the 25 patients suggests that the program has the potential to improve health outcomes and possibly reduce health care costs.

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Corrección metabólica: Una opción bioquímica contra las enfermedades

Jorge R. Miranda-Massari, BS, BS Pharm, PharmD1, Michael J. González DSc, NMd, PhD, FACN2, José R. Rodríguez-Gomez MD, PhD, DSc3, Jorge Duconge, PhD4,5,6, Francisco J. Jiménez Ramirez PharmD7, Kenneth Cintrón MD, FAAOS, ABIHM8, Carlos Ricart, PhD9,10, Rafael Zaragoza-Urdaz MD, PhD8, Miguel Jabbar Berdiel, BS, MD9, Alex Vázquez DC, ND, DO10

1. Universidad de Puerto Rico, Recinto de Ciencias Médicas, Escuela de Farmacia, Departamento de Práctica Farmacéutica, San Juan, PR.
2. Universidad de Puerto Rico, Recinto de Ciencias Médicas, Escuela de Salud Pública, Departamento de Desarrollo Humano, Programa de Nutrición, San Juan, PR.
3. Universidad de Puerto Rico, Recinto de Ciencias Médicas, Escuela de Salud Pública, Departamento de Desarrollo Humano, Programa de Nutrición, San Juan, PR.
4. Universidad de Puerto Rico, Recinto de Ciencias Médicas, Escuela de Farmacia, Departamento de Ciencias Básicas/Generales, San Juan, PR.
5. Universidad de Puerto Rico, Recinto de Ciencias Médicas, Escuela de Farmacia, Departamento de Ciencias Básicas/Generales, San Juan, PR.
6. Universidad de Puerto Rico, Recinto de Ciencias Médicas, Escuela de Farmacia, Departamento de Endocrinología, San Juan, PR.
7. 10475 Centurion Parkway, Ste.220, Jacksonville, Fl.
8. 4. Universidad de Puerto Rico, Recinto de Ciencias Médicas, Escuela de Farmacia, Departamento de Ciencias Básicas/Generales, San Juan, PR.
9. Clínica Berdiel, Ponce, PR.
10. International College of Human Nutrition and Functional Medicine in Barcelona Spain and Portland Oregon USA.

Favor de dirigir la correspondencia a: Dr. Jorge R. Miranda-Massari, Universidad de Puerto Rico, Escuela de Farmacia, Departamento Práctica, GPO Box 5067, San Juan PR 00956-5067. Correo electrónico: jorge.miranda2@upr.edu

Nutrición, Función metabólica y fisiológica

Micronutrientes son requeridos para operar el metabolismo efectivamente. Son necesarios para el buen funcionamiento de grasas, proteínas y carbohidratos además de estar relacionados con la producción de energía corporal. Estas actividades metabólicas requieren que cuatro micronutrientes tengan adicción a dos ácidos grasos (omega-3 y omega-6) y aproximadamente, ocho aminoácidos, esenciales para una adecuada concentración óptima de vitamina C y D. Estos compuestos son requeridos para una adecuada producción de energía corporal (2). De igual manera, otros nutrientes importantes tales como, Coenzima Q10, Acetil-L-carnitina y Lipoico deben ser considerados en nuestra búsqueda de la optimización fisiológica (3). Virtualmente, cada vía metabólica requiere estos micronutrientes para su adecuado funcionamiento y finalización.

La concentración óptima de cada nutrienté facilitará el funcionamiento de células fisiológicas y fisiológicos. Muchos individuos no funcionan al 100% de eficiencia, sin embargo, no presentan ninguna enfermedad detectable o síntomas significativos considerables. De hecho, si se les suministra con las sustancias necesarias en concentraciones requeridas y óptimas, sus procesos fisiológicos mejorarán proporcionando un nivel de prevención para muchas patologías más comunes; aún podríamos mejorar su fisiología fortaleciendo aquellos procesos que dependen otras funciones fisiológicas (3). Virtualmente, cada nutriente facilitará el metabolismo de ciertos aminoácidos, ácidos grasos, carbohidratos complejos, bajos niveles de precursores de neurotransmisores entre otras causas (1). Promovemos que el mejor estado posible de salud se ha de lograr alcanzando un equilibrio metabólico. La importancia de las funciones primarias en las que están relacionadas las vitaminas, minerales y otras sustancias a nivel celular, y especialmente su rol como cofactores en las reacciones enzimáticas, es mayormente no reconocible o poco apreciada por la mayoría de los profesionales de la salud y quienes los educan. La importancia de micronutrientes como esencial para el ser humano no ha sido completamente dilucidada debido a la alta complejidad de los procesos celulares, muchos de ellos todavía no se adelante. Sin embargo, conocemos que las enzimas fundamentales para el adecuado funcionamiento corporal requerirán metales como cobre, zinc, manganeso, selenio y vitaminas del complejo B, como una parte integral de su estructura molecular funcional o como parte de su mecanismo de acción (6). Las enzimas desempeñan un rol crítico en la regulación y en el metabolismo de reacciones bioquímicas vitales que toman lugar en los organismos vivos.

El concepto de nutrición metabólica es generalmente reconocido como el estudio de la interacción entre la dieta y la nutrición que afecta la fisiología del cuerpo. La nutrición, en general, es esencial para el buen desarrollo corporal. En el caso de las enfermedades, los alimentos pueden variar ampliamente según las necesidades particulares de las funciones metabólicas (4,5). Esta variación puede ser causada por problemas digestivos y de mal absorción, sensibilidad o alergias a los alimentos, dificultades en el metabolismo de ciertos aminoácidos, ácidos grasos, vitaminas del complejo B, carbohidratos complejos, etc. (6). Deben mejorar el cuerpo a una mejor forma, para que pueda alcanzar la optimización metabólica que se busca.

Abstract:

Human development and its physiology depend on a number of complex biochemical body processes, many of which are interactive and independent. The speed and the degree in which many physiological reactions are completed depend on enzymes activity, which is on the basis of the co-factors and nutrients interactions. Vitamin and mineral interaction is a key matter to metabolic balance. This interaction is a study of how small molecules interact in a normal metabolism and can be understood in terms of the role of micronutrients in health management. The concept of metabolic correction is becoming a significant term because the presence of genetic variants induces, usually, nutrients deficiencies and insufficiencies. Factors such as, a particular genetic composition, inadequate dietary intake, fad diets, environmental stress (smoking, alcoholism, environmental trauma, etc.) can lead to a deficiency of nutrients in order to obtain optimal metabolic balance.

Keywords: Metabolic Correction, chronic illness, genethrophic disease, biochemical individuality, nutrients, vitamins and minerals.
El concepto de corrección metabólica

El concepto de corrección metabólica proporciona la explicación bioquímica de la utilización de los nutrientes como cofactores enzimáticos, definiendo cómo estas moléculas precursoras, las moléculas reguladoras y metabolitos para fines preventivos y terapéuticos contra las enfermedades (11). La corrección metabólica es un concepto funcional bioquímico/fisiológico que explica cómo el progreso bioquímico celular ayuda al cuerpo a lograr optimización metabólica o fisiológica. La figura 1 ilustra el concepto.

La alta prevalencia de un polimorfismo genético en la enzima que convierte el ácido fólico al metabolito metabólicamente activo 5-methylhöfotodoxol reducta (MTHFR) (14-16). MTHFR cataliza una reacción (producto de un co-sustrato de homocisteína) en el cual el metabolito tóxico serina es convertido en un producto metabólico de la betaína (12,13). Los Hispánicos tienen mayor prevalencia que el resto de la población en la alta prevalencia de su mutación, que es lo mismo, dependiendo de la prioridad y la necesidad que es lo mismo, dependiendo de la prioridad y la necesidad que es lo mismo, dependiendo de la prioridad y la necesidad que es lo mismo, dependiendo de la prioridad y la necesidad que es lo mismo, dependiendo de la prioridad y la necesidad que es lo mismo, dependiendo de la prioridad y la necesidad.

Referencias:

Resumen

El desarrollo humano y su fisiología dependen de un sinnúmero de complejos procesos bioquímicos corporales, muchos de los cuales son codpendientes e interactivos. La velocidad y el grado en que se completan muchas reacciones fisiológicas dependen de la actividad enzimática, la cual a su vez, depende de la biodisponibilidad de co-factores y micronutrientes como lo son las vitaminas y los minerales. Para lograr un estado fisiológico saludable, los organismos necesitan que las reacciones bioquímicas ocurran en forma controlada, a una particular velocidad y nivel ó grado en que se completan. Para alcanzar esto es necesario que se requiera un equilibrio metabólico óptimo. Factores como lo son una particular composición genética, patrones erróneos en el consumo dietario, traumas, enfermedades, toxinas y estrés ambiental elevan las demandas de nutrientes para poder obtener el equilibrio metabólico óptimo requerido. La corrección metabólica es un concepto bioquímico y fisiológico que explica cómo las mejoras en la bioquímica celular de un organismo pueden ayudar al cuerpo a alcanzar la optimización metabólica y fisiológica. Resumimos la contribución de varios pioneros en la comprensión del rol de los micronutrientes en el manejo de la salud. El concepto de la corrección metabólica se está convirtiendo en un término significativo dado a la presencia de variantes genéticas que afectan la velocidad de las reacciones de los enzimas, causando alteraciones metabólicas que favorecen o promueven el estado de múltiples enfermedades. La disminución en el valor nutricional de los alimentos que consumimos, el aumento de la demanda de ciertos nutrientes causada por el desarrollo normal, las enfermedades y los medicamentos inducen usualmente el desgaste de nutrientes. Dichas insuficiencias nutricionales están causando enormes costos debido al aumento de la morbilidad y la mortalidad en nuestra sociedad. En resumen, la corrección metabólica mejora la función enzimática, que favorece las funciones fisiológicas normales, contribuyendo así a mejorar la salud y el bienestar en el ser humano. El propósito de este manuscrito es describir e introducir el concepto de corrección metabólica como un mecanismo funcional costo-efectivo contra la enfermedad y de contribuir a la prevención de enfermedades, la regeneración del organismo y la salud.

INTRODUCTION

Brugada Syndrome (BrS) is a hereditary cardiac channelopathy that predisposes affected individuals to ventricular arrhythmias. BrS is associated with sudden cardiac death in otherwise healthy individuals and is characterized by ST-segment elevation in the right precordial ECG leads and a high incidence of sudden death in patients with structurally normal hearts. It is difficult to estimate the true prevalence of the disease in the general population because the ECG pattern can be dynamic and is often concealed [2]. The clinical diagnosis of BrS is made when a type 1 BrS ECG pattern is associated with a personal history of syncope secondary to a ventricular tachycardia (VT) or ventricular fibrillation (VF), or a history of aborted sudden cardiac death. This diagnostic electrocardiographic pattern has a worldwide prevalence in the general population of 1 in 1,000 individuals, representing a relevant health care issue [3]. The mainstay treatment in BrS is implantation of an implantable cardioverter defibrillator (ICD).

Brugada Syndrome in Puerto Rico: a Case Series

Héctor Banchs-Viñas MD*, Norwin Rivera MD², Héctor Banchs-Pieretti MD¹, Pablo Altieri MD¹

¹University of Puerto Rico School of Medicine, Department of Medicine, Cardiology Section, San Juan, Puerto Rico.
²Veterans Affairs Caribbean Healthcare System, Department of Medicine, San Juan, Puerto Rico.

*Corresponding Author: Héctor Banchs-Viñas MD - PO Box 365067, San Juan, PR 00936-5067. E-mail: hectort.banchs@upr.edu

CASE 1

A 62-year-old man with past history of arterial hypertension and type 2 diabetes mellitus was referred for elective non-cardiac surgery when he had sudden onset of cramping pain on his left shoulder followed by loss of consciousness for approximately 1 minute. He regained consciousness normal except for a temperature of 39°C. ECG performed after he regained consciousness revealed ST segment elevation in leads V1-V3 (Figure 1) and he was taken emergently to the cardiac catheterization laboratory due to suspected STEMI. Coronary angiography showed normal coronary arteries with no obstructive lesions and left ventriculogram showed preserved left ventricular systolic function. Transthoracic echocardiography showed normal structural abnormalities with normal left ventricular ejection fraction. Upon further questioning, he reported 3 past episodes of syncope, loss of consciousness, seizure activity, a history of arrhythmias and family history of sudden cardiac death. He also denied alcohol, cigarette or drug abuse. Laboratory studies, including complete blood count, serum chemistries, hepatic and renal function tests, were all within normal limits. Troponin I, CK-MB and myoglobin levels were also within normal limits. Based on clinical presentation and electrocardiographic findings he was diagnosed with Brugada syndrome and an ICD was implanted. He was discharged home without complications.

CASE 2

A 29-year-old man with history of bronchial asthma presented to the emergency department with retrosternal chest pain of 3 hours duration and loss of consciousness. Pain was described as 10/10 in intensity, oppressive, and non-radiating. Chest pain started after an episode of emotional stress, after which he suddenly lost consciousness for approximately 3 minutes, regaining consciousness spontaneously. By the time he arrived to the emergency department all symptoms had resolved.

Resposta: las encuestas de la Asociación Médica para que, juntos, podamos alzar una única voz.
A 62 year-old man with past history of recent and recurring syncope of consciousness in the past year. These episodes were not associated with exertion and he did not seek medical care at that time. He denied palpitations, history of heart disease, cardiac surgery, shortness of breath, diaphoresis, seizures, or family history of SCD. He admitted to recent cocaine abuse including the day of the event. Physical examination and vital signs were unremarkable. Initial complete blood count and serum chemistry were within normal limits, including postassium levels. Troponin, creatine kinase and myoglobin were all within normal limits, including postassium levels. Based on the ECG (Figure 2) showed resolution of the Brugada pattern. 2D-Echocardiogram showed normal left ventricle systolic and diastolic function with 60% ejection fraction, normal cardiac chambers dimensions with no structural abnormalities. Required electrical cardioversion. He was transferred to our institution with a suspected STEM for emergent cardiac catheterization. Coronary angiography showed no significant lesions and transhoracic echocardiography revealed no structural abnormalities and normal left ventricular ejection fraction. Medical history was negative for previous episodes of syncope, arrhythmias and family history of sudden cardiac death. Laboratory workup revealed mild leukocytosis and Troponin I elevation with normal levels. Troponin, creatine kinase and myoglobin were all within normal limits, including postassium levels. Laboratory workup revealed mild leukocytosis and Troponin I elevation with normal levels. Troponin, creatine kinase and myoglobin were all within normal limits, including postassium levels. Based on the ECG findings and a history of syncope and ventricular tachycardia the diagnosis of BrS was made and the patient received an ICD for secondary prevention. He was admitted without complications and discharged home in stable condition.

DISCUSSION

Brugada syndrome (BrS) was first described in 1992 as a disease that predisposes apparently healthy individuals to sudden cardiac death [3]. It is an autosomal dominant inherited arrhythmic disorder characterized by ST elevation with successive negative T waves in the right precordial leads without structural cardiac abnormalities [4]. The ECG changes can be dynamic and sometimes are concealed and may be observed only in certain situations, such as fever, intoxication, vagal stimulation, electrolyte imbalance and with some drugs (sodium channels blockers) that may unmask a Brugada pattern [5]. There are 3 recognized ECG patterns seen in BrS, but only the type 1 pattern is considered diagnostic (Figure 5). In individuals presenting with patterns 2 and 3 provocative maneuvers must be performed in order to unmask the type 1 pattern. Although most cases of BrS display right precordial ST-segment elevation, isolated cases of ST-segment elevation in the inferior precordial leads have been reported in Brugada-like syndromes [2]. It is important to recognize the Brugada ECG pattern and to be aware that patients with BrS may be initially diagnosed with BrS [6]. Life-threatening ventricular arrhythmias are the hallmark of Brugada syndrome and can present as the result of accelerated inactivation of the sodium channels and predominance of transient outward potassium current to generate a voltage gradient in the right ventricular myocardium triggering VT/VF possibly through a phase 2 reentrant mechanism [5,9]. Patients are at risk for sudden cardiac death (SCD) due to ventricular arrhythmias which can be the first manifestation of the disease, and often occur at rest and at night [2]. The syndrome manifests in man in the third and fourth decades of life [10]. Roughly 15% to 20% of the patients with BrS have mutations at the alpha subunit of the sodium channel gene (SCN5A) but recent studies have linked the syndrome to mutations in the genes that encode the α and β subunit of the calcium channel and the gene that encodes glycerol-3-phosphate dehydrogenase 1-like enzyme (GPD1L) [7]. The Brugada phenotype has been reported to be up to 8 to 10 times more prevalent in men than in women and hormonal influence might play a role in the phenotypic manifestations of BrS [6]. Patients with BrS have an increased incidence of atrial arrhythmias with atrial fibrillation being the most common, found in 11% to 14% of patients [4]. Enhanced duration of atrial action potential and increased intra-atrial conduction time may contribute to the genesis of atrial arrhythmias in BrS [7]. In patients with BrS and a history of aborted SCD or syncope secondary to VT/VF, an implantable cardioverter-defibrillator (ICD) is considered the first line therapy and is the only proven effective treatment for the disease [2]. For patients with recurrent VT/VF and ICD shocks, adjunctive medical with quinidine may be required for suppression of ventricular arrhythmias [4]. This case series shows that it is important for physicians to be aware of other causes of ST segment elevation that may be confused for VT/VF and ICD shocks. It is important to recognize the Brugada ECG pattern. The prevalence and incidence of BrS has not been studied in Puerto Rico and it is our understanding that further research into BrS and sudden death is needed in our population.

REFERENCES

RESUMEN

El Síndrome de Brugada es un desorden cardiaco hereditario que causa arritmias ventriculares en personas sin enfermedad estructural cardiaca. Este síndrome puede causar muerte súbita y tiene un patrón hereditario autosómico dominante causando mutaciones en los canales de iones del corazón, predisponiendo a los individuos a la mutación a arritmias ventriculares. El tratamiento para esta condición consiste en la implantación de un desfibrilador cardíaco. El Síndrome de Brugada no ha sido estudiado en Puerto Rico y a nuestro entender solo existe en la literatura un reporte de caso del Síndrome de Brugada en Puerto Rico. En este artículo presentamos tres casos de Síndrome de Brugada que fueron atendidos en el Centro Cardiovascular de Puerto Rico y del Caribe y hacemos una revisión de la literatura.

CASE REPORT / REPORTE DE CASO

Dysphagia is a symptom shared by many medical and psychiatric conditions (4). A thorough Psychiatric evaluation could rule in a functional or psychogenic etiology (10). If a Psychological etiology is identified, a psychodynamic formulation could help the consultation psychiatrist clarify the origin of the symptom and provide a better explanation to the patient and medical team resulting in improved care by prevention of unnecessary medical interventions, improvement of symptoms and individualization of the treatment (14).

Introduction

Since the dawn of the medical arts, inexplicable signs and symptoms have been a focus and a source of great frustration to the patients and the practitioners in the field. In an attempt to find an explanation, many times a mystical etiology was considered. As the structure of mind and its relation to the brain and body was explored, slowly the veil of mystery was lifted and revealed the possible role of unconscious conflicts manifesting through physical symptoms, as demonstrated in the works of Breuer and Freud (3,6,7,9) with Anna O. Also, Paul Briquet and Jean-Martin Charcot explored the influence of heredity on the symptom and the common association with a traumatic event (15).

As Psychosomatic Medicine developed during the 20th century, many of the field’s pioneers, such as Franz Alexander, were analytically trained. This background molded their conceptualization of illness in the patient; they applied psychodynamic principles which have been part of the human psyche since the dawn of man, continue to be relevant today. We present a case that demonstrates the value and significance of including psychodynamic considerations in patient care in the Psychosomatic Medicine setting.

Case Report

The patient is a 23 years old female who presented with symptoms of dysphagia, more to solids than liquids, which started 2 weeks prior to admission. She had a prior medical history of eczema but no other medical conditions. She was admitted to the Family Medicine service for administration of intravenous fluids due to dehydration and weight loss. After admission, the patient was evaluated by Gastroenterology and Neurology who were not able to find a physical etiology for the symptoms. An endoscopy revealed a small hiatal hernia and mild gastritis but the Gastroenterology service believed that this finding could not explain the patient’s symptoms. Prior to admission, the patient was evaluated by Otology and Neurology who could not find any pathology had evaluated her. Her vitals, labs (including H. Vittamin level and rheumatologic assays, CBC, BMP) were within normal limits. Her urine toxicity and pregnancy test were negative. A brain MRI did not reveal any acute or chronic intracranial process or mass. The Psychosomatic Medicine service was consulted on Day 5 of inpatient medical treatment to evaluate possible psychogenesis of somatic illness.

A comprehensive psychiatric evaluation was performed which included a mental status examination, further medical work up, social and developmental history, and collateral information from parents. Developmental history revealed that the patient had an anxious style of attachment (1): the mother had always been excessively protective of the patient and unable to allow necessary risk-taking steps towards independence. The patient was clingy, unable to cope with absences of the caregiver and sought constant reassurances; mother and daughter showed a strong enmeshment. At the same time, an insecure attachment with the paternal figure had developed due to a distant father. In late adolescence, the patient began to try to gain independence and a sense of self through studies, work and formalizing a romantic
relationship with another key male figure, the dysphagia symptoms emerged.

The patient’s mental status examination revealed a young adult female who appeared younger than stated age, with fair grooming and hygiene, wearing pink pajamas with bunnies, watching cartoons. She had good eye contact and good rapport and cooperation during the interview, but appeared distant when talking about sensitive subjects. Also, while at bedside there was a stuffed animal, an iPhone with a cover of a baby bear and baby food that her mother had brought her. There was no psychomotor agitation or retardation. Her speech was spontaneous, with adequate volume and production. She described her mood as ‘well’ and her affect was restricted. Her thought process was coherent, relevant, and logical. Thought content did not reveal delusions, phobias, obsessions or compulsions, nor any disturbing wishes, no suicidal or homicidal ideas. There were no perceptual disturbances, her affect was appropriate and oriented to person, place and time. She had good attention and concentration. Her insight was superficial and her judgment was fair.

Based on the fact that a full medical work up was negative, and the patient’s history revealed key psychological stressors, which could be related to the current complaints, our diagnostic impression using the DSM 5 of the American Psychiatric Association (2) was: Conversion Disorder (Functional Neurological Symptom Disorder), with swallowing symptoms, acute Neurological Symptom Disorder), our diagnostic impression using the DSM 5 of the American Psychiatric Association (2) was: Conversion Disorder (Functional Neurological Symptom Disorder), with swallowing symptoms, acute Neurological Symptom Disorder). This case highlights the relevance of psychodynamic interventions in the consultation setting. Furthermore, it underscores how educating patients, families and medical teams about the ways in which psychodynamic conflicts can make for better patient care and valuable psychiatric consultations.

References

Resumen
La disfagia es un síntoma común en muchas condiciones médicas y psicológicas (4). Una evaluación psicopatológica exhaustiva podría aclarar la etiología psicológica o psicológica (10). Si se identifica una etiología psicológica, una evaluación psicopatológica podría ayudar al Psiquiatra de consulta a elaborar un origen y una intervención psicopatológica. Un mejor explicación al paciente y al equipo médico. El resultado fue una mejora clínica significativa en el manejo del tratamiento y en algunos casos, la mejora de síntomas (14).

Abstract
Functional brain imaging with brain single photon emission computer tomography (Brain SPECT) has been used for many years in the evaluation of multiple neuro-degenerative and neuro-developmental disorders. Brain SPECT is a nuclear medicine tomographic study performed with a lipophilic radiopharmaceutical labeled with 99mTc-marked cerebral perfusion agent that depicts the global and regional perfusion patterns in the cortical gray matter and subcortical structures.

Corinela de Lange syndrome (CdLS) is a rare neuro-developmental and genetic condition associated to several malformations. There are a limited number of cases reported in the medical literature and few reports neuro-radiological and/or neuro-pathological abnormalities. We report a case of a 15 year old patient, clinically diagnosed with CdLS, who presents limited anatomical findings on computer tomography and Magnetic Resonance Imaging. To the best of our knowledge, this is the first report of the Brain SPECT findings in this syndrome.

Key words: Corinela de Lange, Brain SPECT

CASE REPORT / REPORTE DE CASO

Functional Brain Imaging in Corinela de Lange Syndrome: Case Report and Literature review

Frieda Silva-Hernández MD (1), Gloria I Rodriguez-Cuadrado MD (1), Ralph J Martin-Ruaigip MD (1), Lourdes Barreras-Aval MD (2), Brenda González-Chevere CNMT (1), Roberto Valentín-Rivera MD (1), Eduard Labat-Álvarez MD (1)

Nuclear Medicine and Diagnostic Radiology Sections, Radiological Sciences Department, School of Medicine, University of Puerto Rico (1) and Barreras Ambulatory Adult and Pediatric Radiology Clinic, CMCPO Box 365067, San Juan, PR, 00936-5067

Introduction
Functional brain imaging with brain single photon emission computer tomography (Brain SPECT) has been used for many years in the evaluation of multiple neuro-degenerative and neuro-developmental disorders. Extensive work has been published on topics such as Attention Deficit Disorder, Autism and other neuro-developmental entities.

Nuclear medicine functional brain imaging studies can be divided into two types, Brain SPECT or Brain PET. Brain SPECT studies are usually done with 99mTc-labeled perfusion agents. Studies depict the global and regional perfusion patterns in the cerebral cortex and subcortical structures, and are usually done with 99mTc-labeled perfusion agents and/or neuro-pathological abnormalities. We report a case of a 15 year old patient, clinically diagnosed with CdLS, who presents limited anatomical findings on computer tomography and Magnetic Resonance Imaging. To the best of our knowledge, this is the first report of the Brain SPECT findings in this syndrome.

Corinela de Lange syndrome (CdLS), also known as Brachmann-de Lange, Bushy Syndrome or Amsterdam dwarfism, is a rare neuro-developmental and genetic condition associated to several malformations. The syndrome was described in 1916 by Brachmann and in 1923 by de Lange. The reported frequency for the syndrome in the general population is approximately 1:10.000-50.000 individuals (1, 2). The condition may present a broad spectrum of clinical involvement with different phenotypes. Type 1 consists of the severe form, Typus Degenerativus, which is characterized by mental developmental delay, microcephaly, seizures, craniofacial features, defective growth and a great number of malformations in different body organs, and Typus 2 represents the mild and more common form of the syndrome (2). The number of reports in the literature on the neuro-radiological abnormalities of CdLS is scarce. Functional brain imaging studies can be divided into two types, Brain SPECT or Brain PET. Brain SPECT studies are usually done with 99mTc-labeled perfusion agents. Studies depict the global and regional perfusion patterns in the cerebral cortex and subcortical structures, and are usually done with 99mTc-labeled perfusion agents. The neuro-radiological abnormalities and/or neuro-pathological abnormalities. We report a case of a 15 year old patient, clinically diagnosed with CdLS, who presents limited anatomical findings on computer tomography and Magnetic Resonance Imaging. To the best of our knowledge, this is the first report of the Brain SPECT findings in this syndrome.

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Case Summary

A 15 year old male patient was referred to our Nuclear Medicine service for a Brain SPECT study with the diagnosis of CdLS presenting symptoms of sadness, anxiety, learning problems and sleep disturbances. The patient had a prenatal history of delayed fetal growth since the 20th week of gestation; however, pregnancy was otherwise uneventful. The boy was born at 40 weeks of gestational age, weighed 6 pounds with a length of 20 inches. At birth, the neonatologist identified hypertelorism, micrognathia and growth delay, and raised the clinical suspicion of CdLS.

The first year of life was uneventful. At 16 months of age, he was found to have a delay in language skills. At the age of two years, a motor delay was also recognized. At this time the pediatrician also identified small stature and abnormal head movements. There was no evidence of cardiovascular, gastrointestinal or genitourinary pathology and no history of seizures, aggressive behavior, self-mutilation nor was there evidence of autistic features. Neurological evaluation confirmed fine and gross motor delay. An EEG was reported normal. The patient was started on speech therapy. Genetic evaluation confirmed an abnormal band in chromosome 17:925.

The patient started school at the age of 5 and had an adequate progress until age 9 and he began to have difficulty with concentration and attention, difficulty in writing, mathematics and abstract-complex functions, without any reported hyperactivity. At this moment a coexistent clinical suspicion of CdLS was not confirmed.

At age 14, the family moved to another state and he became very anxious and depressed. He was subsequently sent back to his hometown to live with his grandmother and the symptoms improved. In spite of the improvement, a neuropsychiatric re-evaluation was done. Brain SPECT and brain Magnetic Resonance (MR) studies were requested and performed at this time. Psychiatric and psychological therapies were not prescribed. At this moment a coexistent diagnosis of Attention Deficit Disorder (ADD) was entertained without any reported hyperactivity.

Small stature and facial features are a hallmark with characteristic: hypertelorism, arched eyebrows, and long thick eyelashes. The nose is short, and the mouth exhibits a thin upper lip with down-turned corners, the midface is flattened. The neck is also short and the hairline is low; micrognathia occurs in 84% of the cases. There are abnormalities in the hands and feet in more than 90% of the cases. The extremities are small in a significant number of cases, although abnormalities in the lower extremities are less frequent (2). Upper extremity malformations are present in one third of cases; the more common are small hands and dislocation of the radial head.

Gastro-esophageal reflux is present in 50% of the cases. The incidence is similar in both Type 1 and Type 2 disease. Renal malformations are frequent in up to 40% of cases, presenting kidney or urinary tract abnormalities, vesico-ureteral reflux, pelvic dilatation and renal dysplasia as the most common. Gastrointestinal disease, congenital heart disease and apnea are the most common causes of death (3, 4).

Neurologic symptoms include seizures, hyperactivity, wide base gait, and sleep disturbances. Seizures have been reported in 14-25% of the cases; these may be focal or generalized, mainly in the parieto-occipital area. Partial epilepsy is the most common presentation (5, 6).

Psychomotor delay and learning disabilities vary from mild to severe impairment. Language is one of the more affected areas. Hearing loss has been reported in a significant number of cases (>80%). Abnormalities in the auditory canal were documented on CT scans in 30% of the patients (7). Apical presentations of autism disorder have also been described, where patients show significant communication deficit without social impairment (8).

Clinical diagnosis is usually based on the signs and symptoms and the neurodevelopmental characteristics. It should include facial criteria, growth and developmental delay, behavioral problems, musculoskeletal abnormalities and major systemic involvement of the organ systems: central nervous system, cardiovascular, gastrointestinal and genitourinary (3). The diagnosis is confirmed when a mutation in NIPBL on chromosome 5p; mutations have also been reported in SMCA gene on chromosome 1A, SMC3 in chromosome 3, RAD21 and HDA6 (1, 2).

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Neuroanatomic brain changes in severely affected patients include ventricular enlargement of the ventricles, widened fissures and large sulci, hypoplasia of the inferior cerebellar vermis and enlargement of the cisterna magna. Cases with more severe involvement present less ventricular enlargement, hypoplasia of the brainstem and cerebral cortex. Mild disease may have minimal changes, such as ventriculomegaly.

Reports on brain radiologic abnormalities are limited and have been described in CT studies. They include enlarged ventricles, white matter atrophy, especially in the region of the frontal lobes, brainstem hypoplasia and cerebellar vermal hypoplasia. Our case presented mild ventricular enlargement in the MR imaging.

Brain functional abnormalities (PET or SPECT imaging) have not been described in this population. However, it can be postulated that they will involve cortical and subcortical areas. The changes are probably associated to the known anatomic and neuro-pathologic abnormalities. The hypoplastic pons and midbrain structures and the white matter abnormalities project to abnormal network connections to the cerebello-thalamic-striatum connections in the cortical and subcortical regions. These can result in a non-uniform stimulation of the cortical gray matter, thus producing a heterogeneous pattern of tracer distribution. In addition, hypoperfused and/or hypostimulated areas should be evident in the frontal and the parieto-temporal cortical regions, the stratum and thalamus. Abnormalities would be proportional to the severity of the abnormal network connections, the myelin concentration, the degree of cortical atrophy and the structural abnormal constrictions.

Our patient, with mild CdLS (Type 2), showed a heterogeneous pattern of tracer distribution on Brain SPECT. As postulated, the brain perfusion changes are most likely related to the central anatomic and pathologic abnormalities in this group of patients. The findings in the striatum and parieto-temporal region can be related to the subcortical white matter changes and the abnormal network connections from cerebellum to the cortex. This pattern of functional brain abnormalities in this syndrome and could be the first step to identify additional abnormalities in the brain communication system in mild to moderate cases.

Nuclear medicine imaging modalities, including Brain SPECT and PET/CT, can potentially play a role in the diagnosis and management of patients with Cornelia de Lange syndrome. In view of the Brain SPECT findings and presence of NFT described in the literature, an underlying abnormal oxidative metabolic process is also suggested. We believe that PET/CT imaging should be the next step to directly evaluate metabolic brain abnormalities in this syndrome.

References


Resumen

Las imágenes funcionales cerebrales de tomografía computarizada por emisión de fotones (SPECT) se han utilizado durante muchos años en la evaluación de trastornos neurodegenerativos y del neurodesarrollo. Los estudios de SPECT cerebral son procedimientos de medicina nuclear realizados con radiofármacos lipofílicos marcados con 99mTc-pertechnetato. Las imágenes representan los patrones de perfusión subcortical y regional en estructuras corticales y subcorticales.

El Síndrome de Cornelia de Lange (CdLS) es una condición de neurodesarrollo y genética, asociada a malformaciones. Hay un número limitado de casos reportados en la literatura y pocas referencias de las alteraciones neuro-radiológicas.

Presentamos el caso de un paciente de 15 años, diagnosticado con CdLS, quien presentó pocos hallazgos anatómicos en estudios de Tomografía Computarizada y Resonancia Magnética y al cual se le realizó un estudio de SPECT cerebral. A nuestro mejor conocimiento, este es el primer reporte de los hallazgos en el estudio de SPECT cerebral para este síndrome.
Does Injection Site Matter? A Randomized Controlled Trial to Evaluate Different Entry Site Efficacy of Knee Intra-articular Injections

Ariel Dávila-Parrilla, MD, Borja Santalla-Santé, MD, Antonio Otero-López, MD

Department of Orthopedic Surgery, 1 School of Medicine 2, University of Puerto Rico, Medical Sciences Campus, PO Box 365067, San Juan, PR 00936-5067. Email: ariel.davila@upr.edu

Introduction:
Complaints of knee pain secondary to early osteoarthritis are extremely common and may account for up to 30% of visits to primary care physicians (1). Primary osteoarthritis has been classified as a progressive “wear and tear” condition with reported prevalence of 25% to 30% in patients forty five to sixty-five years of age and more than 85% in patients older than sixty-five (1). Recent Appropriate Use Criteria (AUC) from the American Academy of Orthopedic Surgery (AAOS) evaluates the multi-million dollar cost of osteoarthritis treatment programs, physical therapy, NSAIDs, tramadol, intrarticular corticosteroid injections, and arthroscopic loose body removal or partial meniscectomy in carefully evaluated patients (1). However, due to the uncertainty of evidence based recommendations, many and varying exist between guidelines from different governing agencies. Traditionally, orthopedic surgeons and other physicians in general believe in a combination of pharmacological and non-pharmacological interventions to improve patient function, quality of life, and decrease pain.

Due to the proposed inflammatory changes in early osteoarthritis, IA injections with corticosteroids have been considered as an option for disease progression modification, control, and improvement of function (2). Currently there are five injectable corticosteroids with Food and Drug Administration label for IA injection. These are methylprednisolone acetate, triamcinolone acetonide, betamethasone acetonate, triamcinolone hexacetonide, and dexamethasone. Although multiple trials have been carried out on the use of corticosteroid injections in knee osteoarthritis, the results are inconclusive and with mixed results (3). Despite patient self-reported improvements with IA corticosteroid injections, a recent Cochrane review from 2006 (4) failed to find evidence of functional improvement at any follow time-point in patients who received IA corticosteroid injections.

In addition to the inconclusive evidence, multiple studies suggest different accuracy rates of IA knee injections depending on the anatomic site chosen for injection. A recent systematic review of the literature from the literature reported patellar-guided IA Knee Injection (IAKI) at the superolateral patellar (SLP) portal to be the most accurate method of anatomic anterolateral joint line (ALJL) portal to be the least accurate at 70% (10-12). However, the author’s experience suggests patient pre-existing knee joint position, knee pain, and poor knee pain accuracy reported in said studies. It is therefore the aim of this study to evaluate the efficacy of IA injections in reducing pain and improving function in early osteoarthritis and whether the low accuracy rates reported with the ALJL injection site translate to worse functional and pain outcome measures.

Materials and Methods:

The study was carried out as an open-label, randomized controlled trial designed to compare the efficacy of anti-inflammatory knee corticosteroid injections controlling pain and improving function in patients with early primary osteoarthritis changes utilizing different entry sites. Patients were contacted initially at the author’s outpatient clinics during their previously scheduled appointments. Study inclusion and exclusion criteria from different governing boards (including Institutional Review Board (IRB) for this study. All patients gave the informed consent prior being included into the study.

A simple randomization was used to decrease selection bias as patients were selected in an alternating fashion in accordance to one of the four entry sites. The first patient eligible for study received superolateral patellar joint injection, second patient received anterolateral joint injection, third patient received lateral joint injection, etc. A total number of sixty patients were recruited with thirty patients in each group. Eligible patients were initial visitors to our outpatient clinics evaluated for knee osteoarthritis and whether the low accuracy rates reported with the ALJL injection site translate to worse functional and pain outcome measures. The ALJL group had initial VAS scores of 73.93(17.92) that changed at final follow up to an average of 42.33(16.80) with a MCID-VAS of 86% (26 out of 30 patients) for knee osteoarthritis with a clinical improvement of 50% that was statistically significant change was noted with 23% of patients classified as an important change. The MCID-VAS was therefore an estimate of the minimum amount of change a patient would need to overcome in an outcome to classify it as an important change. A distribution-based MCID score was calculated at 27.5(27.17) at the end of the study. The MCID-VAS was therefore considered to have had a clinical important difference.

Data was recorded in Excel (version 14.4.9, Microsoft) and analyzed in XLSTAT. Differences in recorded 2-group data were determined with the t test and chi-squared for comparisons of proportions, with significance at the P<0.05 level.

Results:

A total of 60 patients were recruited in this study as per the inclusion criteria. Ten patients were lost to follow up with a total of 50 patients at completion of the study with date an average of 60.2(10.8) years (range 39 to 79 years old). Twenty patients had previously been injected through an ALJL knee site and 20 were injected through the LSI. No significant difference in age or sex between groups was noted upon randomization of patients.

Injection site pain measured with a 5-point Likert-type scale, with a score of 22.1(29.63) in patients injected through the AL portal compared to 45.0(18.68) on the SL injection site. Furthermore, when classifying significant pain as more than 50 of the maximum pain of 100, the ALJL group was found to have a statistically significant difference was noted with 23% of patients classified as a clinical improvement of 50%. The SL group had a 38.4(17.67) on the VAS scale with higher scores of 73.93(17.92) that changed at final follow up to an average of 42.33(16.80) with a MCID-VAS of 86% (26 out of 30 patients). The ALJL group had initial VAS scores of 73.93(17.92) that changed at final follow up to an average of 42.33(16.80) with a MCID-VAS of 86% (26 out of 30 patients). The SL group had a 38.4(17.67) on the VAS scale with higher scores of 73.93(17.92) that changed at final follow up to an average of 42.33(16.80) with a MCID-VAS of 86% (26 out of 30 patients). The SL group had a statistically significant difference was noted with 23% of patients classified as a clinical improvement of 50% that was statistically significant change was noted with 23% of patients classified as an important change.

The minimal clinically important difference (MCID) score is a number that is used to elicit the significance of changes in scores measured in 90% and 95% of patients compared to clinically significant changes. The MCID is therefore an estimate of the minimum amount of change a patient would need to overcome in an outcome to classify it as an important change. A distribution-based MCID score was therefore considered to have had a clinical important difference.
Discusión:

El presente estudio analizó la eficacia de la inyección de esteroides en el tratamiento de la artritis de rodilla. Se realizó un ensayo clínico aleatorizado en los pacientes con artritis de rodilla de etiología hiperuricémica, que fue llevado a cabo en el Hospital Universitario de la Universidad de Puerto Rico en el año 2012.

Los pacientes se asignaron aleatoriamente a dos grupos: grupo tratamiento y grupo control. El grupo tratamiento recibió una inyección de esteroides en el espacio intraarticular de la rodilla, mientras que el grupo control no recibió ninguna inyección. Los resultados se compararon con los de un grupo control prevista en el protocolo del estudio.

Los resultados mostraron que los pacientes del grupo tratamiento experimentaron una mejora significativa en la escala de dolor y en la escala de funcionalidad. Se observó una reducción en la inflamación y en la dolorato sintomática en los pacientes del grupo tratamiento. La mejora fue mantenida durante el seguimiento a lo largo de 6 meses.

No se encontraron diferencias significativas en la evolución de los pacientes del grupo control. Los pacientes del grupo control mostraron un leve aumento en la inflamación y en la dolorato sintomática, pero no fueron significativos en comparación con el grupo tratamiento.

Conclusiones:

1. La inyección de esteroides en el espacio intraarticular de la rodilla es un tratamiento efectivo en el tratamiento de la artritis de rodilla de etiología hiperuricémica.
2. La inyección de esteroides es un tratamiento seguro y bien tolerado.
3. La inyección de esteroides es una opción efectiva en el tratamiento de la artritis de rodilla de etiología hiperuricémica.

Referencias:

Use of Screening Tests for Colorectal Cancer Among Gynecologists in Puerto Rico

J. Romaguera¹, S. Seymour¹, V. Cabrera¹, J Medina², J. De Jesús², A.P. Ortiz³

University of Puerto Rico - School of Medicine¹, Obstetrics and Gynecology Department², and School of Public Health³

Abstract

Objective: To determine the use of screening tests for colorectal cancer (CRC) among gynecologists in Puerto Rico. This study evaluates the screening practices used by gynecologists in PR to diagnose CRC and adherence to screening guidelines.

Methods: A self-administered anonymous questionnaire was mailed to 440 practicing gynecologists through the College of Physicians and Surgeons of PR. The questionnaire included general and specific questions.

Results: Response rate was 23.2% (102/440). Of this group of gynecologists, 77.5% referred screening patients, while 22.5% did not. The majority (28.4%) use Fecal Occult Blood Test (FOBT) as a first screening test, while 27.5% use Colonoscopy. Screening is started by 49% at age 50. Only 7% stop screening after age 75 and 31% never stop screening. CRC Screening performed by participants were: 35% screening annually, 6% screen 2-3 years, 10% screen every 5 years, 6% screen every 10 years, and 6% screen 5-10 years. Data for CRC Screening reveals 7% gynecologists comply with all the guidelines; 49% comply with the recommendations regarding the start screening age and 7% stop screening as per guidelines.

Conclusion: The recommendations are not followed by the majority of the gynecologists in PR that participated in the study. Further research should be directed towards the reasons for not complying and how to educate nursing and medical population to achieve adequate screening in the PR female population.

Introduction

CRC is one of the most common causes of death in Puerto Rico (PR). CRC is the first most common cause of death from cancer in Puerto Rican men and women (3) and is the second most commonly diagnosed cancer among men and women (1). According to the American Cancer Society, in 2010, about 136,830 people are predicted to be diagnosed with colorectal cancer worldwide. The most commonly diagnosed cancers worldwide are lung (13.0%), breast (11.9%) and stomach (8.8%) cancer (1). According to the American Cancer Registry, the age and US population adjusted mortality rates during the period of 2006-2010 were 13.0 per 100,000 women and 21.0 per 100,000 men and for 2010 alone were 12.7 per 100,000 and 20.6 per 100,000 men. During the period of 2006-2010 men had 60% higher risk of dying from colorectal cancer in comparison to women. CRC incidence rates also adjusted for age and US population during 2010 alone were 19.2 per 100,000 women and 48.4 per 100,000 men (3). In terms of mortality, CRC accounted for 13.1% in men and 13.2% respectively of all cancers that were diagnosed from 2006 through 2010. (Figure 1)(3). According to the Puerto Rico Central Cancer Registry, the age and US population adjusted mortality rates during the period of 2006-2010 were 13.0 per 100,000 women and 21.0 per 100,000 men and for 2010 alone were 12.7 per 100,000 and 20.6 per 100,000 men. During the period of 2006-2010 men had 60% higher risk of dying from colorectal cancer in comparison to women. CRC incidence rates also adjusted for age and US population during 2010 alone were 19.2 per 100,000 women and 48.4 per 100,000 men (3).

CRC is a worldwide health problem that affects a significant amount of individuals. According to GLOBOCAN, an estimated 14.0 million new cancer cases and 8.2 million deaths occurred in 2012. The most commonly diagnosed cancers worldwide are lung (13.0%), breast (11.9%) and colorectal cancer (12.3%) million for 2010. (Figure 1)(3). According to the American Cancer Society, in 2014, about 136,830 people are predicted to be diagnosed with colorectal cancer worldwide. The most commonly diagnosed cancers worldwide are lung (13.0%), breast (11.9%) and stomach (8.8%) cancer (1). According to the American Cancer Registry, the age and US population adjusted mortality rates during the period of 2006-2010 were 13.0 per 100,000 women and 21.0 per 100,000 men and for 2010 alone were 12.7 per 100,000 and 20.6 per 100,000 men. During the period of 2006-2010 men had 60% higher risk of dying from colorectal cancer in comparison to women. CRC incidence rates also adjusted for age and US population during 2010 alone were 19.2 per 100,000 women and 48.4 per 100,000 men (3).

Screening for CRC is recommended by the American Cancer Society (ACS) and other organizations worldwide. An estimated 53% of CRC cases are diagnosed at an early stage. Since 2015, the American College of Physicians recommends screening for colorectal cancer at age 45 (3). The National Program of Cancer Registries (NPCR) indicates CRC as the third most common cause of death in the United States (39.9% per 100,000) and third among Hispanics in the US (35.4% per 100,000) in 2011 (5). Screening for CRC is advisable as it is one of the few types of cancer in which premalignant growths have been identified and the disease can be prevented if these growths are found and removed. A recent article reported that in patients tracked for 20 years, the death rate from CRC was cut by 53% in those who had the colonoscopy and whose doctors removed precancerous growths (4).

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CRC screening should begin at age 50*.

Flexible sigmoidoscopy every 5 years**

Colonoscopy every 10 years***

Double contrast barium enema every 5 years****

CT colonography every 5 years*****

Yearly fecal occult blood test (gFOBT)*

Yearly fecal immunochemical test (FIT)

Screening should begin at age 50*.

Flexible sigmoidoscopy every 5 years**

Colonoscopy every 10 years***

Double contrast barium enema every 5 years****

CT colonography every 5 years*****

Yearly fecal occult blood test (gFOBT)*

Yearly fecal immunochemical test (FIT)

*Screening for CRC should begin at age 45 in people with a family history of CRC.
**Flexible sigmoidoscopy should be performed every 5 years.
***Colonoscopy should be performed every 10 years.
****Double contrast barium enema should be performed every 5 years.
*****CT colonography should be performed every 5 years.
******Yearly fecal occult blood test (gFOBT) should be performed yearly.
*******Yearly fecal immunochemical test (FIT) should be performed yearly.

Figure 2. Comparison of the CRC screening guidelines stipulated by the ACS and the USPSTF in 2014.
Conclusión: Las recomendaciones y guías establecidas no están siendo seguidas por los ginecólogos de Puerto Rico que participaron en el estudio. Futuras investigaciones deben llevarse acabo para establecer las razones por cuales las guías no se están siguiendo y como debemos educar a la población médica para que le podamos proveer un cernimiento adecuado a la población de féminas en Puerto Rico.

Corresponding Author: Josefina Romaguera MD, MPH
Medical Sciences Campus, Department of Obstetrics and Gynecology
P.O. BOX 36-5067
San Juan, PR, 00936-5067
Tel: 787-758-0037
email: josefina.romaguera@upr.edu

RESUMEN
Objetivo: Determinar el uso de pruebas de cernimiento para Cáncer Colorectal entre los ginecólogos en Puerto Rico. Este estudio evalúa las prácticas de cernimiento utilizadas por ginecólogos en Puerto Rico para diagnosticar cáncer colorectal y cuan al día están con las últimas guías.

Métodos: Se envió por correo un cuestionario anónimo auto administrado a 440 médicos que practican la ginecología en Puerto Rico. El cuestionario fue enviado a través del Colegio de Médicos y Cirujanos de Puerto Rico. Este cuestionario incluye preguntas generales y específicas.

Resultados: La tasa de respuesta fue de un 23.2% (102/440). De este grupo de ginecólogos, 77.5% refieren hacer pruebas de cernimiento a sus pacientes, mientras que 22.5% no lo hacen. La mayoría (23.2%) de los participantes refiere utilizar FOB como una primera prueba de cernimiento, mientras que 27.5% utilizan colonoscopía. El 49% reporta que comienza el cernimiento a los 50 años. Solo 7% de los participantes detiene el cernimiento a los 75 años y 31% nunca detiene el cernimiento. Se reporta que el cernimiento para cáncer colorectal se hace: anualmente (35%), cada 2-3 años (6%), cada 5 años (10%), cada 10 años (6%), y cada 10 años (10%). El 7% de los participantes relatan que nunca detienen el cernimiento. Se refiere que solo el 7% de los ginecólogos cumple con todas las guías establecidas, mientras que 49% cumplen con algunas guías para la edad a la que se comienza el cernimiento y 7% detienen el cernimiento según las guías.

Conclusión: Las recomendaciones y guías establecidas no están siendo seguidas por los ginecólogos de Puerto Rico que participaron en el estudio. Futuras investigaciones deben llevarse acabo para establecer las razones por cuales las guías no se están siguiendo y como debemos educar a la población médica para que le podamos proveer un cernimiento adecuado a la población de féminas en Puerto Rico.

Objetivo: Determinar el uso de pruebas de cernimiento para Cáncer Colorectal entre los ginecólogos en Puerto Rico. Este estudio evalúa las prácticas de cernimiento utilizadas por ginecólogos en Puerto Rico para diagnosticar cáncer colorectal y cuan al día están con las últimas guías.

Métodos: Se envió por correo un cuestionario anónimo auto administrado a 440 médicos que practican la ginecología en Puerto Rico. El cuestionario fue enviado a través del Colegio de Médicos y Cirujanos de Puerto Rico. Este cuestionario incluye preguntas generales y específicas.

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Acquired Von Willebrand Syndrome In Aortic Stenosis: Case Report And Review

Running Title: Aortic stenosis and rectal bleeding

Said, Alsaidawi, MD*, Marian Couto, MD®, Angel López-Candales, MD®
Division of Cardiovascular Diseases*, University of Cincinnati School of Medicine, Cincinnati, Ohio and the Cardiovascular Medicine Division®, University of Puerto Rico, School of Medicine, Ponce, Puerto Rico

Address all correspondence to: Angel López-Candales, MD, FACC, FASE Cardiovascular Medicine Division - University of Puerto Rico - Medical Sciences Campus
San Juan, Puerto Rico 00936-5067 - angel.lopez17@upr.edu

INTRODUCTION

Severe aortic stenosis and gastrointestinal bleeding (GIB) have been known to be associated for many years. The condition was first described in 1958 by Edward Heyde (1) and is only known to affect 0.5% of patients with aortic stenosis (2). The pathogenesis of Heyde’s syndrome involves iron deficiency anemia due to acquired Willebrand factor (vWF) deficiency and ultimately gastrointestinal angiodysplasia.

The diagnostic dilemma is that both aortic stenosis and intestinal angiodysplasia are quite common in patients above 65 years of age. The patients in this age group also have a high incidence of coronary artery disease as well as arterial fibrillation, and the management of both entities requires antiplatelet therapy and/or anticoagulation, making the management of these patients even more challenging. The diagnostic dilemma and management warrants a multidisciplinary approach, risk stratification and possibly aortic valve replacement.

CASE PRESENTATION

A 61-year-old man presents to the Emergency Department with a 3-weeks history of easy bruising.

He described the appearance of large ecchymoses on both thighs and right arm with minimal trauma; but denied any spontaneous bleeding.

Past medical history is significant for hypertension, diabetes mellitus, and chronic kidney disease treated with lisinopril 10 mg, hydrochlorothiazide 25 mg daily, metformin 1 g BID, and glipizide 5 mg BID.

Upon further questioning he has also noticed some mild gum bleed as well as passage of bright red blood per rectum in the previous two months. In addition, over the last 6 months not only has he noticed to be more weak and tired, but also has experienced shortness of breath on exertion. He denied fever, chills, hematemesis, melena, and dizziness or chest pain. He also denied using nonsteroidal anti-inflammatory drugs, but occasionally drank alcohol and smokes one pack of cigarettes daily.

On presentation, he was afibrile, blood pressure was 110/85 mmHg, pulse rate was 89 beats per minute, respiratory rate was 12 times per minute and his oxygen saturation was noted to be 98% at rest. Pertinent findings on physical examination included some gum oozing, a diminished second heart sound, epigastric tenderness, and a peaking systolic ejection murmur that radiated to both carotids and his arterial pulses were delayed. Lungs were clear bilaterally and his abdomen was benign. Normal brown stool was noted on the rectal examination. Finally, two large ecchymoses were noted; one on his left thigh and the other on his left thigh.

Pertinent laboratory data included, hemoglobin of 12.5 g/dl, hematocrit of 36.7%, platelets were 270,000, prothrombin time was normal at 12.79 s and RWD of 18%. Iron studies showed an iron of 45 mg/L, TIBC of 450 ug/dl, and ferritin level of 24 ng/mL. Liver function was normal with an AST of 33 IUL and ALT of 30 IUL. PT was 13 s, INR was 1.0 and PTT of 31 s.

Interestingly, von Willebrand factor (vWF) antigen levels were normal as well as Factor VIII; while the Ristocetin assay was severely reduced.

An echocardiogram was obtained in view of the distinctive aortic valve morphology and showed a mildly reduced bicuspid aortic valve area with a pressure gradient of 55 mmHg and a calculated aortic valve area of 0.8 cm2 suggestive of severe aortic stenosis. A colonoscopy was identified with severe calcification and reduction in left flexion mobility with an aortic valve mean gradient of 55 mmHg and a corresponding aortic valve area of 0.8 cm2 suggestive of severe aortic stenosis.

The pathogenesis of Heyde’s Syndrome involves iron deficiency anemia due to acquired Willebrand factor (vWF) deficiency and ultimately gastrointestinal angiodysplasia. Correct diagnosis and management warrants a multidisciplinary approach.

Key Words: Aortic stenosis, bicuspid aortic valve, gastrointestinal bleeding, acquired von Willebrand syndrome

DISCUSSION

Dr. Edward Heyde first reported the association between patients who were diagnosed with both aortic stenosis and gastrointestinal bleeding (1). Thus, the simultaneous occurrence of aortic stenosis and the finding of angiodysplastic gastrointestinal bleeding is recognized as the Heyde’s syndrome. However, it still remains to be determined whether both clinical conditions are quite common in the general population.

Specifically, aortic stenosis is found in up to 2% of individuals aged 65 years, 3% in those 75 years and 4% in 85 years of age while angiodysplasia is the second most common cause of lower gastrointestinal bleeding in patients aged more than 60 years of age. (2, 3).

When surgical options for the management of severe aortic stenosis were discussed with the patient, he decided against any invasive intervention thereby choosing to stop any further treatment at that time; but also left the hospital against medical advice and has been lost to follow-up.

Heyde’s syndrome patients not only are older; but also their clinical presentation might not be that of overt clinically evident gastrointestinal bleeding, but unexplained iron-deficiency anemia (21-22). Correct identification of patients with Heyde’s syndrome requires a careful history and the time of work-up for GI bleeding or iron-deficiency anemia. Unfortunately, routine tests such as von Willebrand factor antigen levels and ristocetin cofactor activity might not be helpful. Heinz bodies, microangiopathic hemolytic anemia, and a platelet function analysis with adenosine diphosphate closure tend to be the most sensitive test for the diagnosis of von Willebrand disease.

If the diagnosis is recognized, treatment might be complicated with an increased risk of later life mortality. The medical management usually requires involvement by cardiologists, gastroenterologists, and cardiothoracic surgeons. Ultimately, the only known definitive treatment alternative is aortic valve replacement that reduces shear stress and thus prevents the angiodysplastic vessels that might require treatment with aspirin, antplatelet agents or heparin. In some cases these patients suffer from arterial fibrillation that might require treatment with anticoagulants. In these patients may also require numerous endoscopic procedures to manage their bleeding and even surgery. Even though there are conflicting reports that claim a reported 5-fold increased risk of perioperative mortality and nonfatal myocardial infarction in aortic stenosis patients independent of their coronary anatomy, a newer report found statistically significant difference in terms of composite end points, including death, myocardial infarction, heart failure, and ventricular arrhythmia (24-25).

Unfortunately, there is no consensus regarding the best surgical option for the patient and every physician must individualize each case and determine the optimal surgical strategy that might suit the severity of the aortic stenosis, and the hemodynamic profile of their patients. After discussing the options, the final therapeutic decision is made.

Unless Heyde’s syndrome is recognized, treatment might be complicated with an increased risk of later life mortality. The medical management usually requires involvement by cardiologists, gastroenterologists, and cardiothoracic surgeons. Ultimately, the only known definitive treatment alternative is aortic valve replacement that reduces shear stress and thus prevents the angiodysplastic vessels that might require treatment with aspirin, antplatelet agents or heparin. In some cases these patients suffer from arterial fibrillation that might require treatment with anticoagulants. In these patients may also require numerous endoscopic procedures to manage their bleeding and even surgery. Even though there are conflicting reports that claim a reported 5-fold increased risk of perioperative mortality and nonfatal myocardial infarction in aortic stenosis patients independent of their coronary anatomy, a newer report found statistically significant difference in terms of composite end points, including death, myocardial infarction, heart failure, and ventricular arrhythmia (24-25).

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In certain cases, patients would either require optimization of medical therapy prior to surgery or definitive treatment without surgery with Contact F, hormonal therapy, glucocorticoid replacement.

Do We Need Hormonal Screening In Patients With Subcentimeter Pituitary Microadenomas?

José Hernán Martínez-Méndez MD¹FACP, Madeleine Gutiérrez-Acevedo MD², Coromoto Palermo-Garofalo MD³, María de Lourdes Miranda-Adorno MD⁴, Michelle Garza-Madero MD⁵, Alfredo Sánchez-Cruz MD², Carmen Rivera-Anatón MD⁶, Paola Mansilla-Letelier MD⁷, Ivan Laboy-Ortiz MD⁸; Endocrinology, Diabetes and Metabolism Department, San Juan City Hospital.

Address reprints request to: José Hernán Martínez-Méndez MD°FACP, Endocrinology, Diabetes and Metabolism Department, San Juan City Hospital, PMB #79 P.O. Box 7034, San Juan, Puerto Rico 00936-8344. endocrinom@gmail.com

CASE HISTORY

A 54-year-old post-menopausal woman was seen at our endocrinology clinic. She presented with upper and lower extremity paresthesias, salting cravings, episodes of hypothrombinemia and a long term history of depression. Physical exam was unremarkable. Cervical and brain MRI ordered by her neurologist three years ago revealed a normal size sella turcica without any obvious pituitary incidentaloma (Figure 1) and a mild bulging disc C4-C5 and C5-C6. Despite persistence of symptoms, the repeated pituitary MRI with IV contrast showed no significant findings (2) and the study done three years ago.
Impairment of growth hormone secretion has been noticed in isolated ACTH deficiency patients and was normalized after glucocorticoid replacement therapy. (5) Untreated Growth Hormone deficiency has been associated with overall mortality and morbidity in adults due to vascular disease, with female patients having significantly higher mortality compared to males. Growth hormone deficiency may present increased central obesity, fatigue, muscle weakness, impaired well-being, psychological dysfunction and difficulty concentrating. (2) Glucocorticoids exert growth hormone release at the pituitary level while pharmacologic doses inhibit growth and plasma growth hormone response to provocative stimuli. (5) It has been reported that Growth Hormone deficiency in patients with isolated ACTH deficiency resolve after adequate glucocorticoid treatment, since physiological cortisol levels are necessary to achieve adequate growth hormone response to provocative stimuli with growth-hormone-releasing hormone (GHRH). (5) Screening for hypopituitarism is not routinely done for pituitary microadenomas due to the absence of clear guidelines for management or screening of very small microadenomas. The Task Force more strongly favor routine testing for hypopituitarism in macroadenomas and larger microincidentalomas for example 6-9 mm, and not necessarily in smaller microincidentalomas. (6) For patients with isolated ACTH deficiency, with a stable very small 3 mm pituitary incidentaloma on pituitary MRI. Due to the initial hormonal screening a correct diagnosis was established. However, as already mentioned, our patient refused glucocorticoid treatment. Adult ACTH and GH deficiency are underestimated disorders frequently misdiagnosed. (8) Even though recent guidelines strongly favor hormonal screening for microincidentalomas of 6 mm to 9 mm, and not necessary in smaller microincidentalomas, our case shows that hormonal deficiencies occur in small tumors less than 6 mm in size.

REFERENCES
Lack of training and Comfort level with Provision of Palliative Care in Puerto Rican Emergency Departments

Missela Rosado Rivera, MD1, Fernando Soto Torres, MD FACEP2
1Department of Emergency Medicine University of Puerto Rico School of Medicine
2Department of Emergency Medicine Puerto Rico College of Emergency Physicians
Fax: 787-757-1800 Ext 644
Tel: 787-750-0930

Abstract:

Objective: Although many institutions in the United States have incorporated palliative care practices in their emergency departments, very little has occurred in Puerto Rico. Information regarding palliative care medicine physicians in Puerto Rico is unclear and most physicians have poor or no access to palliative care services for their patients. This study explores the perceptions and barriers encountered by practicing emergency physicians in providing palliative care in Puerto Rican Emergency Departments.

Methods: A survey was administered to physicians attending the American College of Emergency Physicians Puerto Rico Chapter annual meeting in Puerto Rico. Provision of palliative care and palliative care training of emergency medicine physicians in Puerto Rico is unclear and most physicians have poor or no access to palliative care services for their patients. This study explores the perceptions and barriers encountered by practicing emergency physicians in providing palliative care in Puerto Rican Emergency Departments.

Results: Of the 85 physicians who completed the survey, 26.5% reported receiving palliative care training while the other 73.5% did not. Of those who received training, 53.8% reported receiving training from the University of Puerto Rico School of Medicine validated the survey tool via a “content validity” approach. Participants were asked to mark Likert type statements with options that ranged from “Strongly Agree” to “Strongly Disagree”. The statements addressed physician comfort level with provision of palliative care and distribution of end of life issues as well as barriers encountered by providers such as time constraints, fear of lawsuits, and lack of access to specialists among others.

Conclusions: Despite recognizing palliative care as an important competence, emergency physicians in Puerto Rico reported insufficient training, decreased level of comfort, and lack of access to specialists in palliative care. Efforts to enhance physician comfort and provide palliative care resources must be pursued in order to improve the quality of care given to patients visiting Puerto Rican Emergency departments.

Key words: palliative care, Puerto Rico, physician training, emergency medicine, palliative medicine, end of life, physician comfort, emergency department, physician perceptions

Introduction

The World Health Organization describes palliative care as “an approach that provides relief from suffering for the terminally ill. It recognizes the family’s physical, emotional, social, and spiritual issues”. Palliative medicine achieves improvement in quality of life and can also reduce the cost of care by establishing efficient communication of the patients’ goals and by integrating conventional treatments with management of symptoms 2. The palliative care approach in the emergency department (ED) can teach the skills required for palliation of symptoms and to communicate effectively with patients. Patient and family satisfaction has been shown to increase with early palliative care interventions and can also reduce hospital stay and total costs 2.

Emergency medicine was once considered the “golden hands” to attend all acute situations and all acute care needed to a need to care for patients seeking immediate medical attention. Palliative care in the ED became an important competence and became an integral part of palliative care. Palliative care practices in the emergency department have grown rapidly. The palliative care approach in the ED can teach the skills required for palliation of symptoms and to communicate effectively with patients. As a result, death and end-of-life care are increasingly included in the curriculum of medical students and residents. However, emergency physicians are trained in the management of acute conditions and not in palliation of symptoms and not in palliative care practices in the emergency department.

Although many institutions in the United States have incorporated palliative care practices in their emergency departments, very little has occurred in Puerto Rico. Currently there is only one hospital that has a Palliative Care Unit: Veteran’s Administration. Emergency physicians in Puerto Rico have little or no training in palliative care and not many hospitals have palliative care services for their patients. There is no information regarding emergency physicians’ perceptions and perceived barriers to palliative care in Puerto Rico. This study attempts to discover the current level of comfort of physicians regarding palliative care and perceived barriers encountered in emergency departments in Puerto Rico. This study will enable future interventions to overcome these barriers and improve physician and staff training.

Methods:

We administered a survey to physicians attending the American College of Emergency Physicians Puerto Rico Chapter Annual Convention. The survey was created using items described in a previous survey by Meo, et al and Schroder, et al 9. Three attending physicians and four residents from the University of Puerto Rico School of Medicine did not participate in the final survey validated the survey tool via a “content validity” approach 10.

At admission, each participant was approached by one of the authors or an assistant to fill in the short survey. Participants were asked to mark Likert type statements with options that ranged from “Strongly Agree” to “Strongly Disagree”. The statements addressed physician comfort level with provision of palliative care and distribution of end of life issues as well as barriers encountered by providers such as time constraints, fear of lawsuits, and lack of access to specialists among others. All responses were analyzed using R 3.0.1. Mean and standard deviations were calculated. Box plot was used to show the distribution of responses for each of the premises in order to determine distribution and range of responses. We also performed an ANOVA to compare physician comfort level in regards to years of experience. A copy of the survey is provided in Appendix A. The Institutional Review Board for the University of Puerto Rico School of Medicine approved this study.

Results:

Of the 85 physicians present in the American College of Emergency Physicians Puerto Rico Chapter Convention, 59 participated in the survey for an overall response rate of 70%. Participant’s ages ranged from 27-74 years with a mean of 45.9 years. Participant’s years of experience ranged from “Strongly Agree” to “Strongly Disagree”. The statements addressed physician comfort level with provision of palliative care and distribution of end of life issues as well as barriers encountered by providers such as time constraints, fear of lawsuits, and lack of access to specialists among others. All responses were analyzed using R 3.0.1. Mean and standard deviations were calculated. Box plot was used to show the distribution of responses for each of the premises in order to determine distribution and range of responses. We also performed an ANOVA to compare physician comfort level in regards to years of experience. A copy of the survey is provided in Appendix A. The Institutional Review Board for the University of Puerto Rico School of Medicine approved this study.

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The barriers to providing palliative care were evaluated with the survey statements 8 and 10. Those surveyed, 35% (mean 3.69 ± 1.54) reported feeling some level of discomfort at providing palliative care in the ED. Limitation of care was identified as a barrier by 63% (2.42 ± 1.05) of participants. Only, 18% (mean 2.59 ± 1.10) reported lacking of access to the ED as a barrier. Finally, less than 1% (mean 2.02 ± 0.94) reported difficulty with identifying potential palliative care candidates.

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In addition, despite easily recognizing candidate patients in the ED, physicians overwhelmingly reported lack of palliative care providers, teams, specialists and/or protocols. This alarming because although they readily identify patient candidates, physicians may want to dedicate time to these patients when they are often too occupied to do so.

Furthermore, almost 40% of those surveyed agreed that their lack of training in palliative care is a barrier to the care these patients receive. These results identify a need for further training in a significant proportion of physicians working in Puerto Rican ED’s. Limited training in palliative care is not only a barrier in Puerto Rico but has been identified as a barrier elsewhere. In a study involving HIV specialists and oncologists treating HIV patients in Puerto Rico, patients et al. discovered a need to provide training in palliative care as HIV patients were being undertreated for pain due to misconceptions with morphine use and timing of administration of palliative care measures. Smith et al. also report that residents felt their training with pain management in the ED was not deficient and requested increased training on the topic. These results are also similar to results by Meo et al. where residents who were surveyed identified level of training in palliative care and request further training.

Discussion: The emergency physician has the unique opportunity to identify and intervene with patients who require palliative care in a way that can significantly alter the service they receive. But, in order to adequately do so ED physicians must be properly trained and have access to the necessary resources. Physicians surveyed reported numerous barriers when providing palliative care in the ED. Barriers identified include poor access to the primary care physician, time constraints, lack of training and insufficient support. Similar to results found by Grudzen et al. physicians in our study reported that working in the busy ED creates time constraints that force them to rank palliative care as a lower priority 8. This is unfortunate even though physicians may want to dedicate time to these patients when they are often too occupied to do so.

In addition, especially recognizing candidate patients in the ED, physicians overwhelmingly reported lack of palliative care providers, teams, specialists and/or protocols. This alarming because although they readily identify patient candidates, physicians are unable to treat them effectively due to a lack of resources.

Despite the majority of physicians surveyed recognizing their role in palliative medicine and its importance for patient care, approximately 33% believe that palliative care is the responsibility of the primary care physician. This finding is not unique to Puerto Rican ED’s. In a study performed by Grudzen et al., when interviewed some emergency physicians report that discounted the end of life care and patient goals should be the responsibility of the palliative care physician whereas physicians who reported accepting the importance of palliative medicine for patient care and the active role the physician plays in assuring and providing palliative care had less negatively scored on the survey. These results are contrary to Vejlgaard’s findings where 10% reported they would rather the responsibility of palliative care to someone else 12. Our findings suggest that on third of the physicians working in Puerto Rican ED’s are less likely to perform palliative medicine because they don’t recognize providing palliative care as their obligation. Thulsius et al. discovered that education of staff significantly improved attitudes toward end of life care and we believe that further training of physicians working in Puerto Rican ED’s will help change these attitudes and contribute to improvements in patient care 13.

Even though most reported feeling comfortable providing palliative services in the ED, over one third report discomfort and an inability to provide the care these patients require. In addition, physicians reported lacking confidence in their ability to discuss palliative care appropriately. These results are similar to the results found by Grudzen et al. where residents report feeling their training with pain management in the ED was not deficient and requested increased training on the topic. These results are also similar to results by Meo et al. where residents who were surveyed identified level of training in palliative care and request further training.

Table 2. Mean response values for the Likert scaled survey

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<tr>
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The results of this study may be limited as the participants represent a small slice of physicians working in Puerto Rican ED’s. These results may not necessarily reflect all physicians working in Puerto Rican ED’s attitudes or perceptions of palliative care and may not be generalized to areas outside of Puerto Rico. This study also overwhelmingly involved participants who recognized themselves as general medicine physicians and only a small percent of general practitioners. As there is a large number of general practitioners working in Puerto Rican ED’s we feel there could be a selection bias as the survey was distributed at the ACEP Puerto Rico chapter’s annual emergency medicine convention where emergency physicians are more likely to be present. The tool used a Likert scale that limits the possible responses available, physicians were not provided with the opportunity to write in other options. Additional barriers or attitudes may not have been identified due to the limited nature of the survey tool. Participant’s level of training and knowledge of palliative care was not formally assessed and results relied on self-reports.
Future interventions to improve physician training and education are necessary. Palliative care teams/specialists require training, protocols, and experience working in this field. It is crucial for emergency physicians to be aware of how to handle symptoms of the end-of-life care process. This awareness enables them to provide better care to patients and their families who are faced with the challenge of living with a terminal illness.

Conclusion:

Palliative care is a crucial aspect of healthcare that should be recognized and utilized. Further research is needed to improve the current training and education of physicians in this area. Future interventions should focus on promoting the establishment of palliative care services and ensuring that healthcare providers are adequately trained to manage patients with end-of-life care needs.
DISCUSSION

This study shows that there is a 54% rate of young adults with ADHD who are undertreated. Although the percentage treated was more than expected in comparison with known data in USA, it continues to be less than 50%. Between modalities of treatment, 40% were treated with a stimulant, 4.5% with a non-stimulant (Bupropion), 18.2% with psychotherapy alone, and 18.2% with psychotropics other than neurocognitive enhancers. Between the neurocognitive enhancers used, Ritalin was the most common.

Regarding to occupation, 80% of patients treated were students; while 20% were not. Among individuals not treated, the percentage between students vs non-students, was the same (50%).

Comorbidities were common among the individuals with ADHD (73%), with mood disorders the most common, followed by anxiety. By gender, more females (75%) were treated with pharmacotherapy for ADHD compared to males (29%).

CONCLUSIONS

Young adults with ADHD continue to be undertreated even though our clinic is part of a major academic institution which could contribute in to an increase in the treatment of this condition. This could be primarily due to close follow-up of recent publications regarding the diagnosis and treatment implications. However, it is important to note that there is still a large percentage of 18-25 year-old adults with ADHD who are not receiving any medical treatment at all. The role of a mental health professional’s cultural and psychological factors and their implication on the decision-making process when deciding how to adequately treat patients with ADHD, would be an interesting topic for further research as a possible explanation of why this condition remains undertreated and underdiagnosed.

REFERENCES


ACKNOWLEDGEMENTS

Karina Quiles, Psychology Intern-Ponce School of Medicine
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  - sangrado inesperado o sangrado que dure mucho tiempo, como sangrado inusual en las encías, sangrado nasal frecuente o sangrado genital vaginal más profuso de lo normal
  - sangrado intenso o que usted no puede controlar
  - orina roja, rosada o de tonalidad marrón; heces rojas o negras (que parecen brea)
  - toser o vomitar sangre o vómito que parece borra de café
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Este riesgo es mayor, si le colocan un catéter epidural en la espalda para administrar ciertos medicamentos, toma AINE o anticoagulantes, o si tiene historial de punciones epidurales o espinales difíciles o repetidas. Informe de inmediato al médico si tiene hinchazón, adormecimiento o debilidad muscular, especialmente en las piernas y los pies.

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Por favor responda las siguientes preguntas:

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<td>Ha sido convicto por alguna delincuencia en los últimos 5 años?</td>
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