

Department of Internal Medicine TTUHSC - El Paso

TITLE: IMPROVING HEALTHCARE COMMUNICATION

Speaker: Armando Meza, MD, Associate Dean for Graduate Medical Education, Associate Professor of Medicine, Department of Internal Medicine, Texas Tech University Health Sciences Center, El Paso

Introduction: Effective communication in the health care setting has become one of the most important elements in our current efforts to improve patient care. Due to the inherent diversity of styles and intents the current approach is to develop structured, standardized method that will allow a freer, two-way line flow of information. A couple of models are reviewed and discussed here. The evidence suggests progress has been achieved; however, continued efforts to more effectively develop in this field are still needed.

Objectives:

- Identify ways to improve communication among health care providers
- Demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families and health professionals

Discussion: The SBAR method (Situation Background, Assessment Recommendation) developed in the military field has been introduced in a mass scale in Arizona by the Hospital and Healthcare Association with significant success. According to one study the improvement occurred mainly in the reception of nursing input, disagreement resolution, name of personnel recognition, and the quality of collaboration with nurses and MD's. Expansion into other areas of the nation and other health care related scenarios has already occurred.

The transition of patient care among physicians is among the riskiest steps in the hospital setting. Inaccurate, obsolete, unnecessary and even absent information can occur during this process with potentially adverse outcomes. The so called hand off has also been standardized in diverse clinical settings and in 2009 Arora et al put out together a task force generating specific recommendations. Hand off should occur, be time protected, template based and a verbal exchange of communication should take place. The very ill should take priority, a centralized data location, data up to date and easy tracking of the on call individual are essential additional components for an effective process.

As more focus is placed on safe patient care and performance improvement the more mandatory the nature of this measures will become.

Conclusions/take home points

- Effective interpersonal and communication skills benefit patient care.
- A systematic, structured approach to communication in the healthcare environment is the best method.
- At both individual and institutional level, resources allocation will be needed to meet the current and up coming educational and as well as patient care standards.

TITLE: MANAGEMENT OF ANEURYSMAL SUBARACH-NOID HEMORRHAGE

Speaker: Alberto Maud, MD, Neurointerventionalist and Stroke Specialist, Assistant Professor, Department of Neurology and Radiology, Paul L. Foster School of Medicine and Texas Tech University Health Sciences Center, El Paso

Introduction: Aneurysmal subarachnoid hemorrhage (aSAH) is a serious disease that affect up to 50,000 of Americans yearly. A high level of suspicion is needed to diagnose this condition in all patients with an abrupt onset of severe headache. Early addressing of patients with aSAH, including optimal hyperacute medical management initially, advances in microsurgical and endovascular treatment to secure the ruptured intracranial aneurysm, and early recognition of the acute neurologic and medical complications have resulted in decreasing the mortality from 50% to 33% in the last two decades.

Objective: To discuss the acute management of aSAH based on the latest guidelines for the management of aneurysmal subarachnoid hemorrhage from a special writing group of the Stroke Council, American Heart Association.

Discussion: Patients with aSAH are at high risk of subsequent rebleeding. Up to 20% of the patients will experience rebleeding in the first 3-4 days after the original bleed. A second subarachnoid bleed is usually fatal. Traditionally, ruptured (and unruptured) aneurysms have been treated with surgical clipping. This procedure requires craniotomy, cerebral lobe retraction, and sometimes bone drilling with a resulting risk of damage of delicate nerve structures

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like cranial nerves and the optic apparatus. Surgical clipping in a swollen brain can be a challenging surgery that requires a great level of neurosurgical expertise. In 1991, a new less invasive modality was introduced through endovascular microcatheterization of the aneurysm and packing (sealing) of aneurysmal sac with electrolytically detachable coils. The endovascular coiling technique rapidly became popular in part because of its less invasiveness compare with surgical clipping. However, there were concerns about the efficacy and durability of the coiling procedure. These concerns motivated the researchers to do a randomized comparison between these two techniques in patients with aSAH carrying intracranial ruptured aneurysm amenable to treatment with either modality (International Subarachnoid Aneurysm Trial). At one year the incidence of death and severe disability in the coiled group was significantly smaller and the trial was prematurely stopped. In up to 14 years of follow up of these patients, the coil proved to be durable over time. The incidence of late rebleeding in the coiled group is low and the long term mortality is the same for both groups. ISAT turned out to be a milestone in the treatment of aSAH. Since the early 90's, extensive advances have been realized in endovascular technique. In particular, aneurysms initially judged as untreatable through endovascular means are currently treated thanks to the balloon remodeling and stent assisted techniques. However, not all aSAH benefits from endovascular coiling. Surgical clipping still is an excellent option for certain types of ruptured intracranial aneurysm. An evidence based discussion should always be in place between the treating neurosurgeon and the treating neurointerventionalist to deliver the best treatment option to a specific patient.

Take home points:

- A high level of suspicion for aSAH is warranted in all patients with acute onset of severe headache.
- Recognition of a warning aneurismal leak (sentinel bleed) can save lives.
- The traditional dismal prognosis associated with aSAH has improved in the last decades in part due to more recognition of the disease, better ICU care, and new therapeutic options.
- Early addressing of the most common neurological complications, including vasospasm improves outcome.
- Hospitals that have a rapid access to neurointerventional treatment can deliver a better outcome to subarachnoid hemorrhage patients.

TITLE: THE ASSOCIATION BETWEEN LEAD EXPOSURE AND KIDNEY DISEASE

Speaker: German Hernandez, MD, Assistant Professor of Medicine, Department of Internal Medicine, Texas Tech University Health Sciences Center, El Paso

Introduction: It is estimated that 26 million Americans have chronic kidney disease (CKD). CKD carries a high risk for cardiovascular morbidity and mortality and can also progress to end-stage kidney disease (ESRD), requiring life-saving therapy with dialysis or transplantation. In the USA, racial/ethnic groups carry a disproportionate burden of CKD and are at higher risk for progression to ESRD.

Exposure to the heavy metal lead may contribute to the progression of CKD regardless of the etiology of CKD. Racial/ethnic minorities in the USA have a higher risk of exposure to lead.

During this Medicine Grand Rounds, data was presented examining the association between lead exposure and kidney disease at the national population level and among patients with CKD in Taiwan.

Also, our own research data was presented, examining the prevalence of lead exposure among predominantly Mexican American patients with CKD in the El Paso Region.

Objectives. As a result of attending this activity, the attendee will be able to:

- Explain the association between low-level lead exposure and the progression of chronic kidney disease (CKD) regardless of the primary etiology.
- Discuss the epidemiology of blood lead levels and kidney function among patients with CKD in the El Paso region.

Discussion: Lead is a known nephrotoxicant at high levels of exposure. There is a growing body of literature linking lower levels of lead exposure with decreased kidney function. Among patients with CKD (CKD from etiologies other than lead itself) in Taiwan, exposure to low levels of lead from the environment appears to act as a risk factor for progression of CKD. A small Taiwanese randomized placebo controlled trial of lead chelation has shown that treatment with Ca-EDTA can decrease the rate of progression of CKD.

Our own study, the Paso del Norte Kidney Disease (PNKDS), shows that among predominantly Mexican American patients with CKD, all have measurable levels of lead exposure. Among patients with non-diabetic CKD, there is strong inverse correlation between higher blood lead levels and lower estimated glomerular filtration rates.

Conclusions/take home points

- Studies from Taiwan strongly suggest that low level lead exposure may be a risk factor for the progression of CKD regardless of the etiology; however more research is needed to confirm this initial finding.
- Among patients with CKD in the El Paso region, there is evidence of lead exposure. Among the non-diabetics patients with CKD, there is strong and significant crosssectional association between higher blood lead levels and lower kidney function. It is our aim to study this question further in a longitudinal study.

TITLE: RURAL-URBAN DIFFERENCES IN SURGICAL CARE

Speaker: Mark Francis, MD, Professor, Division of Rheumatology, Department of Internal Medicine, Texas Tech University Health Sciences Center, El Paso

Introduction: Because people in rural areas generally live farther **Continued on page 8**

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away from hospitals than people in urban areas, there is concern that rural residents may be less willing or able to undergo surgical procedures. Thus, we sought to determine whether Medicare beneficiaries in rural areas were less likely to undergo a variety of surgeries compared to their urban counterparts.

Objectives. As a result of attending this activity:

- Participants will learn whether rural or urban Medicare beneficiaries are more likely to undergo discretionary and non-discretionary surgeries and whether known disparities in surgical utilization are ameliorated or exacerbated in rural environments.
- Participants will understand the difference between confounding and effect modification.

Discussion: Compared to urban beneficiaries, rural Medicare beneficiaries were more likely to undergo a broad array of surgical procedures: 35% for carotid endarterectomy (odds ratio [OR]=1.35; 95% confidence interval [CI], 1.33-1.38), 32% for lumbar spine fusion (OR=1.32; 95% CI, 1.29-1.35), 30% for knee replacement surgery (OR=1.30; 95% CI, 1.28-1.31), 28% for abdominal aortic aneurysm repair (OR=1.28; 95% CI, 1.24-1.31), 22% for prostatectomy (OR=1.22; 95% CI, 1.19-1.24), 19% for hip replacement surgery (OR=1.19; 95% CI, 1.17–1.21), 18% for aortic valve replacements (OR=1.18; 95% CI, 1.14-1.21), 16% for open reduction and internal fixation of the femur (OR=1.16; 95% CI, 1.14-1.18), and 15% for appendectomies (OR=1.15; 95% CI, 1.11-1.19). To determine whether these differences could be explained by known confounding variables, we then use logistic regression to adjust for age, gender, race/ethnicity, median household income, average house value, mean poverty ratio, and state residence. Rural beneficiaries were still more likely to undergo all these surgical procedures.

Conclusions/take home points

- Medicare beneficiaries living in rural areas were more likely to undergo a broad array of surgical procedures.
- While allaying some concern about rural access to surgical procedures, the uniformity of these results raise a concern that people living in rural areas may have an overall poorer quality of health.

TITLE: NONALCOHOLIC FATTY LIVER DISEASE: AN UPDATE

Speaker: Richard Guerrero, MD, Assistant Professor of Medicine, Division of Gastroenterology, Department of Internal Medicine, Texas Tech University Health Sciences Center, El Paso

Introduction: Obesity and its associated co-morbidities are among the most prevalent and challenging conditions confronting the medical profession. A major metabolic consequence of obesity is insulin resistance, which is strongly associated with deposition of triglycerides in the liver. Hepatic steatosis can either be a benign noninflammatory condition that has no sequelae, or it can be associate with steatohepatitis; a condition that can result in end stage liver disease.

Objectives:

Describe the prevalence, risk factors, natural history, and

- treatment of nonalcoholic fatty liver disease (NAFLD)
- Review mechanisms of abnormal fat accumulation in the liver

Discussion: Fat accumulation in primary NAFLD is likely the result of insulin resistance although other yet unidentified factors, either environmental or genetic, clearly contribute to the pathogenesis. Based on estimates from the Dallas Heart Study, the prevalence of hepatic steatosis in the general population may be as high as thirty three percent. We still have a paucity of outcome studies detailing the natural history of this condition. Based on our knowledge of the mechanisms of abnormal fat accumulation in the liver, therapies that target insulin sensitivity seem to be the best candidates for future study.

Conclusions/take home points

- Nonalcoholic fatty liver disease is a spectrum of disease characterized by abnormal accumulation of triglycerides within the liver, which can exist as a benign condition or as steatohepatitis which can progress to end stage liver disease
- Based on current knowledge, the driving mechanism behind triglyceride accumulation in the liver is insulin resistance
- Data from the Dallas Heart Study suggest that up to 33% of the population may have NAFLD.
- Therapies that target insulin resistance seem to offer the greatest benefit in NAFLD patients, however, more study is needed

TITLE: THE LONG QT SYNDROMES: THE LONG AND THE SHORT OF REPOLARIZATION INSTABILITY

Speaker: Jan Nemec, MD, FACC, Associate Professor, Clinical Cardiac Electrophysiology, School of Medicine, University of Pittsburgh, Pittsburgh, Pennsylvania

Introduction: Long QT syndrome is a congenital disorder characterized by prolonged QT interval on a surface ECG. These patients are predisposed to have ventricular arrhythmias, syncope and sudden cardiac arrest. The estimated prevalence is in-between 1 in 2,000 to 5,000. Nearly 60% of patients are symptomatic and sudden cardiac death is the first manifestation in 7-8 % of cases. It has a mortality rate of 7% in unselected and treated patients (by the age of 35 years).

Objectives:

- Review the pathophysiology and current clinical management of acquired and congenital long QT syndrome
- Discuss the role of abnormal calcium handling in arrhythmias associated with Long QT Syndrome

Discussion: We have found an association between early afterdepolarizations and Torsades de pointe (TdP) on the one hand, and oscillations of Ca transient on the other hand. The CaT oscillations occur already during regular rhythm, preceding onset of ventricular arrhythmias. They probably cause ventricula ectopy through activation of NCX, the electrogenic Na/Ca antiporter. This

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will help to discover how to manage torsedes in future.

Conclusions/take home points

- Congenital LQTS is much less common than acquired QT prolongation
- It has autosomal dominant inheritance with variable penetrance
- Most cases are due to mutation in genes encoding ion channel proteins
- Long QT1,2, and 3 will account for nearly 95% of cases
- B-blockers are mainstay of management, with ICD in highrisk patients
- Repolarization lability precedes TdP in LQTS patients and animal models
- Secondary "humps" of Ca transient precede and probably cause early afterdepolarizations and TdP
- Marked spatial heterogeneity of Ca transient develops on a millimeter scale under LQTS conditions; this may contribute to EAD propagation, reentry and arrhythmogenesis

TITLE: ENDOSCOPY AND ANTITHROMBOTIC AGENTS

Speaker: Marc J. Zuckerman, MD, FACP, FACG, FASGE, AGAF, Professor of Medicine, Division of Gastroenterology, Department of Internal Medicine, Texas Tech University Health Sciences Center. El Paso

Introduction: The management of patients undergoing endoscopic procedures who are taking anticoagulant or antiplatelet therapy is a common problem. These drugs are used to reduce the risk of thromboembolic events in patients with atrial fibrillation, valvular heart disease, deep vein thrombosis, hypercoagulable states, and coronary artery disease. Guidelines addressing the management of anticoagulants including warfarin, unfractionated heparin (UFH), low molecular weight heparin (LMWH) and antiplatelet agents including aspirin, nonsteroidal anti-inflammatory drugs (NSAIDs), and clopidogrel are summarized and recent literature reviewed.

Objectives:

- List the endoscopic procedures associated with an increased risk of bleeding
- Discuss the guidelines for adjusting anticoagulant and antiplatelet agents for endoscopy

Discussion: A decision regarding discontinuation of therapy before endoscopy has to be weighed against the patient's risk for developing an adverse ischemic event or thromboembolic complication. Management considerations include the risk of complications of the underlying gastrointestinal disorder related to anticoagulation/antiplatelet therapy, risk of bleeding related to an endoscopic intervention, risk of a thromboembolic event related to interruption of therapy, and the type of anticoagulation and antiplatelet therapy.

Conclusions/take home points

 Endoscopic procedures are classified as either high risk or low risk in terms of the potential to produce significant or uncontrolled bleeding. High risk for bleeding procedures (1-6%) include colonoscopy with polypectomy, EGD with polypectomy, ERCP with sphincterotomy, pneumatic or bougie dilation, percutaneous endoscopic gastrostomy, endoscopic ultrasound guided fine needle aspiration, tumor ablation, esophageal variceal therapy, any endoscopic hemostais therapy.

- Underlying conditions are classified as either high risk or low risk in terms of the probability of developing a thromboembolic complication.
- When antithrombotic therapy is temporary, elective procedures should be delayed.
- For low-risk procedures, no adjustment in antithrombotic therapy is recommended.
- Specific recommendations are given for high-risk procedure, low-risk condition and for high-risk procedure, high risk condition. Recommendations for managing anticoagulant and antiplatelet therapy in the periendoscopic period should not be considered definitive and management often must be individualized.

TITLE: THE "MEANINGFUL USE" CRITERIA FOR ELECTRONIC HEALTH RECORDS: A SUMMARY

Speaker: Adrian Michael, MD, Assistant Professor of Medicine, Division of Rheumatology, Department of Internal Medicine, Texas Tech University Health Sciences Center, El Paso

Introduction: Dr. Michael is the Lead Physician on the Electronic Medical Records implementation Projects at TTU and UMC. These projects will greatly impact physician workflow and understanding the requirements will help prepare for upcoming changes.

Objectives:

- Describe "meaningful use" objectives as it relates to the Federal Health Information Technology for Economic and Clinical Health Act (HITECH)
- Discuss implications for faculty at PLFSOM
- Review the benefits and incentives of using Electronic Health Records

Discussion: There has been no mandated standardization of Electronic Health Records in the past. This is a first step to ensure that Electronic Health Records used can capture standard information and share the information safely. As this initiative continues, there will continue to be reporting on diseases, and core measures to promote population health.

Conclusions/take home points

- Providers who see Medicare/Medicaid patients are being asked to migrate their practice to a certified Electronic Health Record.
- Federal Government is continuously developing criteria to define Meaningful Use of an Electronic Health Record
- The intent of Electronic Health Records is to increase patient safety, exchange information between providers, improve quality of care, and report statistics to improve population health.

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