

Academic Physician Quarterly

A DEPARTMENT OF MEDICINE BULLETIN



UF UNIVERSITY of
FLORIDA
College of Medicine
Jacksonville

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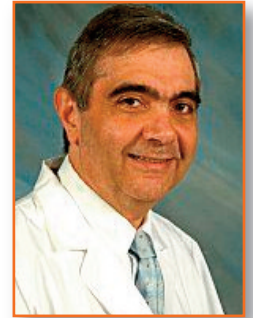
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CHAIRMAN'S MESSAGE

Dear Colleagues:

As I was completing this fall's issue of the Academic Physician Quarterly, I remembered a timely quote from Cicero (106-43 BC). "Gratitude is not only the greatest of virtues, but the parent of all others." As we look forward to the upcoming Thanksgiving holiday, this quote reminds us that it is the time of the year when we express our gratitude for the blessings we have had in the prior year.



The Department of Medicine continued its growth to build on the prior year's successes. The faculty productivity and scholarly output were at an all time high. One of the faculty members Dr. Dominick Angiolillo was recognized as "World's Most Influential Scientific Minds" (See more in the News and Notes section). I am also proud to report that once again according to U.S. News & World Report's 2014-15 Best Hospitals rankings, UF Health Jacksonville was listed as "high-performing" in nine specialties: cancer, cardiology and heart surgery, diabetes and endocrinology, geriatrics, gynecology, nephrology, neurology and neurosurgery, pulmonology and urology. Only 15 percent of hospitals were listed as high-performing in any specialty. It is notable that six of our departmental subspecialties were included in this list.

If you have any suggestions on how to improve our communications with our partners and colleagues in the community, please let me know.

Happy Thanksgiving

Arshag D. Mooradian, MD
Professor of Medicine
Chairman, Department of Medicine



By Cristian Landa, MD
Assistant Professor

Division of General Internal Medicine

Department of Medicine

Ultrasound Use in Hospital Medicine

Physicians have used ultrasonography for several decades. However, its use has only become widely accepted in the last couple of years due to its effectiveness and safety. Emergency medicine has led the way, as far as non-radiology specialists, in the implementation of the ultrasound in its day-to-day practice and now incorporates ultrasound training in the residency program curriculum. Specialties such as critical care and cardiology have also adopted its use, and the technology is rapidly growing. Ultrasound technology has moved from bulky and limited quality imaging to compact, hand-held devices with higher resolution. The improvement in ultrasound technology continues to attract practitioners from different specialties and has captured the attention of medical faculty across the nation.

The first medical ultrasound was developed from sonar technology principles around World War I and sonographic images of a human skull were published in 1947. We can say that since then the technology has moved in leaps and bounds to what it is today. The technology relies on the use of special crystals from quartz or a composite piezoelectric material. The crystals emit a sound wave when an electric current is applied, and as sound waves return to the crystal, a current is generated. This in turn produces an image on a screen with different echogenicity and allows the practitioner to differentiate between solid organs and fluid, as fluid appears black on the screen or anechoic. The relative ease of use of the ultrasound, its compactness, and safety have accelerated its point-of-care application.

Point-of-care ultrasonography simply means ultrasonography brought to the patient's bedside for real time application. Practitioners use the bedside ultrasound mainly for diagnostic assessment and procedural guidance. It is fast, reliable, and affordable especially comparing it to radiographic studies such

as computed tomographic scanning, which has been recognized as a cause of cancer in the United States. Clinicians have been able to apply the bedside ultrasound in emergency situations such as shock and to determine sites of internal hemorrhage after trauma. Some residency programs have used it to confirm bedside physical exam findings. Furthermore, a recent article from the *New England Journal of Medicine* described the use of handheld ultrasound

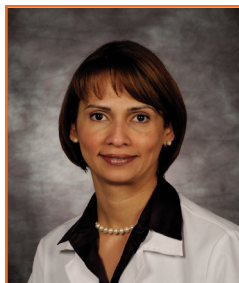


devices by medical students as superior when compared to the cardiovascular physical examination by board certified cardiologists. Whether in the classroom at the undergraduate medical school level, or at the heights of Mount

Everest, point-of-care ultrasonography is becoming a superior diagnostic tool at the hands of trained practitioners. Aside from its diagnostic benefits, clinicians have used it to improve bedside procedures. The medical literature provides infinite evidence on the reduction of complications, decreased failure rates and multiple attempts when compared to the landmark approach. Many of these guided procedures are a required part of internal medicine programs, but few have established curricula. Our department has implemented simulation training for each required procedure and includes teaching of the ultrasound as a diagnostic tool on the hospital floors. Formalized curriculum for residents translates into more confident and competent residents, which ultimately results in improved patient care and safety.

Point-of-care ultrasonography is superior and safer in diagnosis and guided procedures. Residency programs across the nation should strive to formalize curriculum and encourage research to improve its use and create specialty specific algorithms.





Nilmarie Guzman, MD

**Assistant Professor of Medicine
Division of Infectious Disease**

**Associate Program Director,
Internal Medicine Residency**

Exploring New Avenues in Engaging Learners

Another academic year has begun, and we enthusiastically welcome our new class. The Internal Medicine program continuously strives for academic excellence and to strengthen the program with innovations. The program leadership is very excited and proud to announce a few new things. First, the residents' rotation schedule has been revamped to a new format. It consists of a modified block of alternating months between inpatient rotations and outpatient/consult rotations. This new format allows the trainees to have a more rounded, comprehensive experience in each setting. It is compartmentalized and can help prevent fatigue and burnout. The residents have received the change positively because they are able to provide direct supervision to the interns and students as well as uninterrupted care to their patients.

The ACGME requires that residents engage in educational activities that create a model related to health care quality and diminishing health care disparities. With that purpose in mind, we have added a few educational initiatives in our program designed to expand learning about health care disparities. A new training module titled "Caring with Compassion" has been integrated into the curriculum. This module was created by the University of Michigan and is

designed to provide learners with didactic teaching about caring for the homeless, uninsured, underserved and at-risk populations. They will learn how to use team-based skills and bio-psychosocial models of care to provide personalized care for at-risk patients. The curricular content supports achievement in three main competencies; medical knowledge, systems-based practice and interpersonal and communication skills. It also supports progression toward achievement of multiple reporting milestones that are essential components of the ACGME Next Accreditation System.

To complement this didactic piece with clinical application, we approached the leadership at the Sulzbacher Center of Jacksonville. The clinic at Sulzbacher Center offers multiple services for the homeless and underserved. It offers a complete range of primary care services to those in need. Their Primary Health Clinic operates under the direction of a full-time medical director who will precept our residents. Trainees will have the opportunity to evaluate and manage patients with chronic conditions such as HIV, DM, lipid disorders, hypertension, chronic respiratory diseases, etc. In addition, our residents will be able to evaluate and manage patients with an interdisciplinary team composed of nurses, case managers and clinical case coordinators. Being exposed to the center, our trainees will get a better appreciation of the resources and services needed to help, manage and educate this unique patient population. Residents will be assigned to attend the Sulzbacher clinic during their ambulatory rotation.

These additions will hopefully have the desired effect of providing a more global understanding of health care systems and team-based learning.

CLINICAL CASE

**Jason Bellardini, MD, Internal Medicine Chief Resident
Department of Medicine, UFCOM-Jacksonville**

A Rare Case of Bilateral Pleural Effusions

CASE PRESENTATION

A 29-year-old male native of Honduras, immigrated to Tampa, Florida, five months prior to current presentation with several weeks of fatigue, shortness of

breath and abdominal distension. He was diagnosed with AIDS (CD4 65) and disseminated TB (pleural and ascites fluid MTB-PCR +). He was initiated on four drug anti-tuberculin therapy (Rifampin, Isoniazid, Pyrazinamide, Ethambutol) which was discontinued after two weeks due to markedly elevated transaminases. Anti-tuberculin therapy changed to

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Moxifloxacin and Ethambutol . HAART was not initiated.

Physical examination revealed the following: Cachectic, frail appearing male. Vitals stable with O2 sat 100 percent on room air. There were no palpable lymphadenopathy. Cardiovascular examination unremarkable. Mild tachypnea, left lung base with absent breath sounds and dullness to percussion. Abdomen soft but distended with shifting dullness.

Laboratory tests revealed the following: Hb: 12.6; HcT: 37.2; WBC: 3.6; Platelets: 306. Basic metabolic profile normal. Albumin: 4.2; Total bilirubin: 1.4; alkaline phosphatase: 942; AST: 201 and ALT: 239. Hepatitis panel: negative. A CXR showed bilateral pleural effusions, left greater than right and bilateral atelectasis. CT of chest, abdomen and pelvis with contrast showed pleural effusion, abdominal ascites but no evidence of lymphadenopathy.

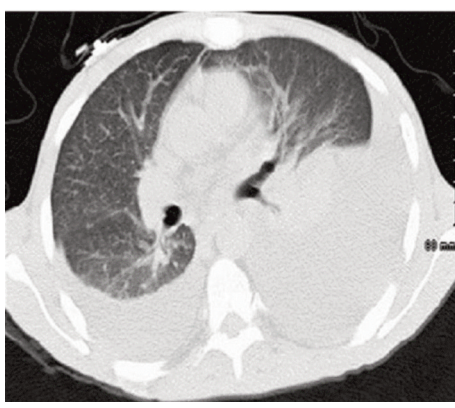


Figure: CT of chest showing large bilateral pleural effusions.

Pleuroscopy and thoracentesis revealed chylous fluid with exudative features. The triglyceride content was 355 mg/dl and cholesterol was 31 mg/dl. Pleural, peritoneal and blood cultures were all negative for AFB, bacteria and fungi. Pleural fluid cytology was negative for malignant cells. Pleural biopsy by pleuroscopy showed only chronic inflammation and negative for AFB. Bilateral pigtail catheters placed in the chest for symptomatic relief and reduced fat, medium chain triglyceride rich diet was started, subcutaneous Octreotide and four drug anti-tuberculin therapy (Rifampin, Isoniazid, Pyrazinamide, Ethambutol) were slowly reintroduced. HAART (Emtricitabine/Tenofovir and Raltegravir) initiated prior to discharge and Bactrim and Azithromycin started for PCP and MAC prophylaxis.

DISCUSSION

Bilateral chylothorax in the setting of Mycobacterium

tuberculosis is a very rare finding. The thoracic duct transports chyle from the intestine to the circulatory system. Composition of chyle is fat with large amounts of cholesterol, triglycerides, chylomicrons and fat soluble vitamins and lymph composed of immunoglobulins, enzymes and leukocytes, primarily lymphocytes.

Biochemical characteristics of chylothorax include lymphocytic predominance >80 percent of total cell count, triglyceride concentration >110 mg/dL, chylomicrons detected on lipoprotein electrophoresis, cholesterol level <200 mg/dL and pH ranging from 7.40 – 7.80.

Disruption to the flow of chyle has been classified into two categories: traumatic and nontraumatic. Nontraumatic causes include malignancy and diseases such as tuberculosis, sarcoidosis, SVC Syndrome, mediastinal lymphadenopathy, diseases of lymph vessels, filariasis and constrictive pericarditis.

Chylothorax is a rare cause of bilateral pleural effusions, especially in the setting of tuberculosis. When described, it is seen with associated mediastinal lymphadenopathy or constrictive pericarditis, which were absent in our patient.

Although our patient did not demonstrate any of the before mentioned findings, the assumption that the chylothorax was a result of TB is supported by the resolution of the pleural effusions after sustained anti-tuberculin therapy and the absence of any other thoracopulmonary disease. To the best of our knowledge, this is one of the first cases reported of bilateral chylothorax in the setting of disseminated tuberculosis without any other thoracopulmonary abnormalities.

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Arshag D. Mooradian, MD and Joe Chehade, MD
Department of Medicine, UFCOM-Jacksonville

Drug Therapy of Diabetes in Older Adults

Adapted from Am J Ther. 2012 Mar;19(2):145-59

The prevalence of diabetes mellitus increases with age and exceeds 18 percent of the United States population ages 65 years or older. In almost one-third of these patients, the disease is undiagnosed. A variety of factors contribute to the carbohydrate intolerance of aging. Biological changes inherent to aging may contribute to altered insulin secretory capacity and reduced insulin activity.

There are special considerations relevant to the management of diabetes in older adults. The onset may be highly insidious as symptoms of polyuria, polydipsia and hyperphagia are masked. The appearance of glucosuria is delayed ²⁰ to increased renal threshold for glucose excretion. Decreased thirst perception is responsible for increased incidence of dehydration as the presenting symptom. Other common presentations include dry mouth, confusion, incontinence, falls, fatigue, weight loss, skin and genitourinary infections, or the diagnosis is made coincidentally during workup for neuropathy, retinopathy or nephropathy.

The management is complicated by co-morbidities as 70 percent of older patients with diabetes have two or more additional diseases. Diabetes control is a quality of life issue and includes improving cognitive function, pain tolerance, and wound healing, decreased risk of incontinence, dehydration, postural hypotension and falls. Treatment considerations should be individualized taking into consideration patient's preferences, risk of hypoglycemia, and cost of medications, family support environment and projected life span. As is the case in the young, the management would require a multipronged approach that includes diabetes education, medical nutrition therapy, exercise, pharmacologic agents, monitoring for diabetes control and complications and attendance to the psychosocial aspects of the patient.

PHARMACOLOGIC INTERVENTIONS:

Although management of people with diabetes

requires additional pharmacological agents to target other risk factors such as hypertension and dyslipidemia, the present communication will focus only on agents that control blood glucose.

The pharmacologic options for treating diabetes have grown considerably (Table 1). Management of Type 2 diabetes should be individualized taking into consideration life expectancy, functional capacity, co-existing diseases, psychosocial environment, side effect profile and cost of therapy, the urgency of blood sugar normalization and patient preferences.

The goal in the elderly diabetic is to achieve euglycemia without the undue risk of hypoglycemia. Although it should be individualized, the following blood glucose values should be sought in patients with life expectancy of over 8 years with minimal or no impairment of function: fasting blood glucose (FBG) between 4.4-6.6 mmol/L (80-120 mg/dl), one hour postprandial (PP) glucose < 8.8 mmol/L (160 mg/dl) and HbA1C < 7 percent. Additional action is suggested if FBG > 7.8 mmol/L (140 mg/dl), PP > 10 mmol/L (180 mg/dl) or HbA1C > 7 percent. In the frail elderly diabetic patient, one should not attempt to lower the FBG or bedtime blood glucose below 5.5 mmol/L (100 mg/dl).

Combination pills can improve adherence to the prescribed antiglycemic therapy; however, the risks of hypoglycemia may be increased when sulfonylurea is included in the pill.

When patients require regular insulin and the ratio of this insulin to the intermediate acting insulin required is 30/70, then an insulin mixture such as Novolin or Humulin 70/30 (protamine and regular human insulin), Lispro 75/25 (lispro protamine and lispro insulin) or NovoLog Mix 70/30 (insulin aspart protamine and insulin aspart) can be used to simplify the regimen. Patients with poor vision or dexterity can benefit from the special syringes with magnifying glasses or can use pre-drawn insulin prepared by a visiting nurse once a week.

CONCLUSIONS

Diabetes mellitus is a common disease in the elderly. Some features of the disease are unique to the older patient. People should not be denied optimization of blood glucose control based on age criterion alone.

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The overall approach to the management of older diabetic patients is similar to that in young patients with some exceptions, notably initiation of lower dosage of oral hypoglycemic agents, more attention to psychosocial factors and highly simplified dietary and drug regimens to enhance compliance.

Diabetes control is a quality of life issue. Improved blood glucose levels are associated with improvements in cognitive function, pain tolerance and wound healing as well as a decrease in incontinence and risk of dehydration, postural hypotension and falls.

Table 1: Comparative profile of available oral agents for treatment of Type 2 diabetes

	Sulfonylureas	Meglitinides	Biguanides	TZD	AGI	DPP-IV inhibitors
Mode of Action	Stimulate insulin release from β -cells	Stimulate insulin release from β -cells	Decrease hepatic gluconeogenesis	Enhance insulin sensitivity in muscles and liver	Reversible inhibition of the intestinal brush border glucosidase	Stimulate insulin release from β -cells, decrease post-prandial glucagon secretion from α -cells
Potency \downarrow in HbA1c	1.5-1.8	1.0-1.5	1.0-1.5	0.7-1.5	0.5-0.7	0.6-0.7
Body weight change	$\uparrow\uparrow$	$\uparrow\uparrow$	\downarrow or neutral	$\uparrow\uparrow$	\downarrow or neutral	neutral
Hypoglycemia	+++	++	0	0	0	0
Side Effects	Prolonged hypoglycemia	Hypoglycemia	Gastrointestinal	Edema, slight increase risk of CHF, may increase risk of CAD (Rosiglitazone)	Gastrointestinal Flatulence	Nasopharyngitis, headaches and upper respiratory infections
Contra-indications	Renal failure (risk of prolonged hypoglycemia)	Renal failure (risk of hypoglycemia)	Renal impairment Liver failure Hypoxemic states (risk of lactic acidosis)	NYHA III-IV Liver failure	Diarrhea	Need dose adjustment with renal impairment

NEWS & NOTES

Dr. Angiolillo named one of “World’s Most Influential Scientific Minds”

Dominick Angiolillo, MD, PhD, an associate professor of medicine and medical director of cardiovascular research at the UF College of Medicine – Jacksonville, was among 3,200 researchers from around the globe recognized for publishing the highest number of articles most frequently cited by fellow researchers. In the report, Thomson Reuters said those recognized on the list are considered to be the people of greatest influence in their respective fields, “performing and publishing work that their peers recognize as vital to the advancement of their science.” Analysts from Thomson Reuters identified most-cited researchers based on papers produced

over an 11-year period, from 2002-2012, across 21 broad fields of academic study, including agriculture, computer science, economics, engineering and mathematics. They tracked authors who published numerous articles that ranked among the top 1 percent of the most cited in their respective fields in the given year of publication. These documents represent research that the scientific community has judged to be the most significant and useful. Angiolillo’s research has included studies on coronary artery disease and antiplatelet medications, which prevent blood clot formation.

View Thomson Reuters’ full report at <http://sciencewatch.com/sites/sw/files/sw-article/media/worlds-most-influential-scientific-minds-2014.pdf>.

MEET YOUR COLLEAGUES



Patrick Antoun, MD, Assistant Professor, Division of Cardiology

Dr. Antoun earned his medical degree from the American University of Beirut in Lebanon. He completed his residency in Internal Medicine and his fellowship in Interventional Cardiology at Indiana University School of Medicine and his fellowship in Cardiovascular Disease at Loma Linda University Medical Center in California.



Silvio de Melo, Jr., MD, Assistant Professor, Division of Gastroenterology

Dr. de Melo earned his medical degree from Federal University of Pernambuco in Brazil. He completed his residency in Internal Medicine and his fellowship in Gastroenterology at University of Texas Southwestern Medical School and his fellowship in Advanced Endoscopy at Mayo Clinic College of Medicine - Jacksonville. Dr. de Melo will serve as Medical Director, Endoscopy.



Claudia Gragnoli, MD, PhD, Associate Professor, Division of Endocrinology, Diabetes and Metabolism

Dr. Gragnoli earned her medical degree, her residency in Internal Medicine and her fellowship in Endocrinology, Diabetes and Metabolism from Sapienza University of Rome in Italy. She earned her PhD in Preventative and Clinical Nutrition from Vergata University of Rome.



Timothy Paterick, MD, JD, MBA, Professor, Division of Cardiology

Dr. Paterick earned his medical degree from Rush Medical College in Chicago. He completed his residency in Internal Medicine and his fellowship in Cardiovascular Disease at Mayo Clinic in Rochester, MN. He earned his JD at University of Wisconsin and his MBA at Edgewood College, both in Madison WI. Dr. Paterick will serve as Medical Director, Noninvasive Imaging Lab.

UF HEALTH JACKSONVILLE

UF Health hospitals recognized among nation's best

UF Health Jacksonville has been recognized as one of the best hospitals in North Florida, based on U.S. News & World Report's 2014-15 Best Hospitals rankings released July 15.

U.S. News & World Report analyzed nearly 5,000 hospitals across the country to determine rankings in 16 adult medical specialties. Only 3 percent of these hospitals earned top 50 rankings in at least one specialty.

UF Health Jacksonville was listed as "high-performing" in nine specialties: cancer, cardiology and heart surgery, diabetes and endocrinology, geriatrics, gynecology, nephrology, neurology and neurosurgery, pulmonology and urology. Only 15 percent of hospitals were listed as high-performing in any specialty.

UF Health Jacksonville's sister hospital, University of Florida Health Shands Hospital, was recognized as one of the best hospitals in the state. Specialty programs at UF Health Shands Hospital that received national recognition include: nephrology (25th), cardiology and heart surgery (41st), and pulmonology (47th).

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UF Health Jacksonville continued from Page 7

“At UF Health, we are dedicated to providing safe, quality care to our patients, and advancing discoveries to find new and better ways to treat them,” said David Guzick, MD, PhD, senior vice president for health affairs at the University of Florida and president of UF Health.

“As an academic health center, this recognition reflects the commitment our faculty and staff have to our missions of patient care, education and research and the unwavering dedication they have to the people who entrust their care to us,” he said.

In addition to being ranked among the nation’s top 50 hospitals in three specialties, UF Health Shands Hospital was also listed as high-performing in eight additional specialties: cancer, diabetes and endocrinology, gastroenterology and GI surgery, geriatrics, gynecology, neurology and neurosurgery, orthopedics and urology.

The rankings take into consideration the reputation of each hospital, patient survival rates and a set of care-related factors such as nursing and patient services. Medical centers are also assessed for competence in providing complex care for patients who are high-risk.

Earlier this year, UF Health Shands Children’s Hospital was recognized in seven pediatric medical specialties in the 2014-15 U.S. News Best Children’s Hospitals rankings: diabetes and endocrinology (14th), cardiology and heart surgery (27th), gastroenterology (34th), pulmonology (35th), neonatology (36th), cancer (41st) and nephrology (41st).

- See more at: <http://hscj.ufl.edu/news/story.aspx?id=1269#sthash.Ypq6frU8.dpuf>