MISSOURI HOSPITALIST SOCIETY

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Hospitalist Update

Missouri Hospitalist at One Year

Robert Folzenlogen MD

This issue of *Missouri Hospitalist* marks the one year anniversary of our organization. Established to increase communication and education among hospitalists across our State, the Missouri Hospitalist Society is an informal group, to which membership is open to all physicians with an interest in our publication. Should you know of someone who would like to receive this newsletter, have them send an email to **folzenlogenr@health.missouri.edu**

Traditionally, the newsletter includes updates in the general field of Hospital Medicine, a Case Report, a list of recommended Journal Articles, ID Corner and a calendar of events and meetings that might be of interest to the hospitalist community. To date, the great majority of these contributions have come from the University of Missouri, Columbia, but we hope to include more items from academic and private hospitalists across the State. There are surely many interesting cases that would be of educational value to all of us and we encourage your use of the newsletter to advertise any hospital medicine programs that may be planned at your institution. Any of these items should be emailed to me, at the above address, and will be included in the next available issue; due to space limitations, some editing may occur. At MU, we will start sending the newsletter to our medicine residents and will encourage them to contribute as well; hopefully, the same will occur at our other training programs.

Beyond the articles, case reports and other items of academic interest, we would like to include **photos** by other members from across Missouri. If you have a particular interest in photography, we would be glad to showcase your work in the newsletter. Once again, the photo(s) should be emailed to me (jpg format preferred).

Thanks for your continued interest in the Missouri Hospitalist Society. Your comments and ideas regarding both the organization and the newsletter are welcome; we hope to represent the interest and convictions of Missouri hospitalists as fully and as accurately as possible.

PHARMACY UPDATE — Joshua Bird, Pharm.D Student & Deepti Vyas, Pharm D

The Future of Warfarin Dosing: What is in the Pipeline?

Pharmacogenetic testing has been researched to find genetic variability among individuals who require warfarin therapy and to possibly reduce the occurrence of adverse events; indeed, the FDA recently approved a labeling change for Coumadin and issued a statement that "lower initiation doses should be considered for patients with certain genetic variations in the CYP2C9 and VKORC1 enzymes." The latter enzymes are the primary agents in the metabolism of warfarin; researches have found 37 different alleles for the CYP2C9 gene with CYP2C9*1 representing the wild (normal metabolizer) type.

Patients who are homozygous for a variant allele generally require less warfarin. The most common variants are CYP2C9*2 and CYP2C9*3, with the latter producing the slowest metabolism of warfarin. The variant alleles have been found to be most common in European-American and African-American populations. While studies demonstrate that pharmacogenetic testing helps to guide dosing and improve safety, it remains to be seen whether such testing proves to be cost effective.

Reference: Limdi, NA & DL Veenstra, *Warfarin Pharmacogenomics*, Pharmacotherapy, 2008, 28(9), 1084-97

CASE REPORT — Robert Folzenlogen MD

A 76 year old male was transferred to MU for management of pneumonia and rhabdomyolysis. He gave a history of cough, green sputum, fever, chills and malaise for the past several weeks; these symptoms did not improve after a 14 day course of Augmentin. He developed increasing weakness, anorexia and an inability to stand up and was taken to his local ER for evaluation. His chronic mild dyspnea had begun to increase and he gave a vague history of weight loss; he denied hemoptysis. Evaluation in the ER revealed WBC 32.3 with 88 segs, Hgb 10.4, BUN 35, Cr 2.6 and CK 1706. A CT of the head was negative but a CXR showed a RUL infiltrate. He was transferred to MU for further evaluation and management.

The patient reported a history of pulmonary fibrosis (diagnosed in 1989), chronic kidney disease secondary to ANCA+ vasculitis (since 2003), peripheral neuropathy and myelodysplastic syndrome. Medications included Prednisone 5mg qd and Cytoxan every 14 weeks. He lives and works on a farm where he raises pigs and grows corn, beans and wheat. Pets include a dog and three cats. He quit tobacco use 20 years ago and stopped using alcohol several years ago; he denied any past use of illicit drugs. He was in the Navy during the Korean war. Though he was a hunter, he has not done so for 6 years and has not travelled over the past six months; he denied recent tick bites. He also denied a past +PPD, history of TB or exposure to TB.

Initial exam revealed a weak, lethargic, elderly male who was otherwise in no acute distress. T was 38.2 and BP was 132/92. No rash or jaundice was noted. HEENT was unremarkable except for poor dentition. Neck revealed no adenopathy or JVD. Chest was reported to be clear and cardiovascular exam was normal; there was no peripheral edema. Abdominal exam was normal with no organomegaly or tenderness.

Admission labs were remarkable for pH 7.30, pCO2 43, pO2 94, saturation 96% (5L), WBC 21.8, Hgb 9.8, HCT 28.7, MCV 93.2, MCH 31.9, Platelets 274, serum K 6.2, BUN 46, Cr 3.0, Alb 2.7, AST 88 and CK 1952 with a CK-MB of 8.0. A CXR revealed a RUL opacity with evidence of cavitation, focal bilateral atelectasis and possible small bilateral pleural effusions.

The patient was admitted to the ICU and placed in respiratory isolation. After appropriate cultures were obtained, he was started on IV Vancomycin, Ertapenem and Azithromycin. Within 24 hours, three sputums were reported negative for AFB and he was moved to the general medical floor with plans for a CT of the chest and possible bronchoscopy. Soon thereafter, one of the sputum samples was reported to be positive for AFB and he was placed back in isolation; the CT of the Chest demonstrated two thick-walled cavities in the RUL, multiple nodular opacities in the right lung and LUL and changes consistent with underlying emphysema. The radiologic differential included mycobacterial infection, malignancy, septic emboli, Wegener's granulomatosis and fungal infection in emphysematous blebs.

A presumptive diagnosis of active TB was made (especially in light of his moderate immunosuppression), an ID consultation was placed and the patient was started on four-drug therapy (INH, Rifampin, Ethambutol and Pyrazimamide); Vancomycin was discontinued but the Ertapenem and Azithromycin were temporarily continued (the latter having anti-mycobacterial activity). Sputum was sent for culture and PCR testing; the latter proved to be negative for TB 5 days later. Pending culture results, the four-drug therapy was continued.

During his early hospital course, the patient continued to spike high fevers, complained of anorexia and was too weak to cooperate with physical therapy. He developed diarrhea which was negative for C diff X3; stool cultures were also negative and no WBCs were present. On the 16th hospital day, the sputum culture was reported to be positive for Mycobacterium avium complex (MAC) and he was switched to a three drug regiment of Clarithromycin, Ethambutol and Rifampin. Modest improvement in the patient's condition occurred over the next week and he was discharged from the hospital with plans for followup by ID. He will be continued on the triple drug regimen until his sputums are negative for 12 months.

Discussion: Non-tuberculous Mycobacteria are ubiquitous in the environment but are not transmitted between humans. Their most common clinical presentation in immunocompetent hosts is chronic pulmonary disease; in such cases, MAC is the most common pathogen. Women with pre-existing lung disease generally develop nodular densities and bronchiectasis. Men with underlying COPD usually get a cavitary lesion which, as in our case, often mimics TB. Diagnosis must include classic CXR/CT findings, at least 3 sputum samples positive for AFB and the exclusion of malignancy and TB. The infection generally develops with the insidious onset of cough, fever,, sputum production, weight loss, weakness, hemoptysis and weight loss.

Macrolide-resistant MAC carries a poor prognosis and this infection should never be treated with a macrolide alone; indeed, macrolide resistance often develops under such conditions or if co-therapy is inadequate. Surgical resection is considered if the infection is isolated, if uncontrolled hemoptysis develops or if the drugs cannot be tolerated. Triple therapy with clarithromycin (or azithromycin), ethambutol and rifampin is recommended; in severe cases, streptomycin or amikacin are suggested.

References:

Clinical Infectious Diseases, Edited by David Schlossberg, Cambridge University Press, 2008

Griffith et al., An Official ATS/IDSA Statement: Diagnosis, Treatment and Prevention of Nontuberculous Mycobacterial Diseases, Am J Resp Crit Care Med, 2007, 175:367-416

FROM THE JOURNALS Damascene Kurukulasuriya MD

Does it Matter How Hypertension is Controlled? Editorial comment by Aram V. Chobanian, NEJM 359:23, December 4, 2008, 2485-2488

From the chairman of JNC-7: contemporary data has increasingly demonstrated that what matters is if HTN is controlled, not how it is achieved. With over 100 drugs to treat HTN, 66% of 73 million American hypertensives are not yet at JNC 7 goals. The ACCOMPLISH trial exposes the inferiority of HCTZ (matched against amlodipine) when combined with the ACEI Benzepril. The article also reports the superiority of chlorthalidone in the ALLHAT trial (double the potency and half life of HCTZ).

Surgical Co-Management: A natural evolution of hospitalist practice. C. Whinney and F. Michota, J Hosp Med, Volume 3, Issue 5, October 2008, 394-397

Examines the evolving role of hospitalists and the distinct advantage of surgical co-management in a team approach, including surgeon, hospitalist, house staff, nurses, case manager, patient and family.

Current Concepts: Implantable Cardioverter-Defibrillators (ICDs) after Myocardial Infarction, Robert Myerburg, NEJM 359:21, November 20, 2008, 2245-2253

With 500,000 Medicare candidates (by current criteria) and an individual cost of $30,000, something will have to give before we drain the Medicare budget. The author comments on the overuse of ICDs in subgroups with questionable benefits.

Who is Managing Acute Decompensated Heart Failure? The need for a Multidisciplinary Approach, Alpesh Amin, J Hosp Med, Volume 3, Issue S 6, S1-S6, December 15, 2008

The author makes a strong case for an increasing role of the Hospitalist as a key player in the Multi-D management of these patients, especially in light of an inadequate Cardiology workforce for the increasing prevalence of CHF

The Curriculum for the Hospitalized Aging Patient (CHAMP) program: A collaborative faculty development program for hospitalists, general internists and geriatricians. Podrazik et al., J Hosp Med, Vol 3, Issue 5, 384-393 A novel faculty development program to improve the teaching of geriatric medicine and the care of elderly patients.

ID CORNER William Salzer MD

Fever and Infection in Older Adults

The IDSA has just released practice guidelines for the evaluation of fever and infection in older adults who are in LTCFs. These guidelines are pertinent to hospitalists since many of these patients are admitted to the internal medicine service in acute care hospitals.

High KP et al., Clinical practice guideline for the evaluation of fever and infection in older adult residents of long-term care facilities. 2008 update by the Infectious Disease Society of America. Clin Infect Dis 2009, 48:149-171

http://www.journals.uchicago.edu/doi/pdf/10.1086/595683

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MISSOURI HOSPITALIST CALENDAR

4th Annual Perioperative Medicine Summit 2009, February 5-7, Eden Roc Resort, Miami, Florida; register via www.cme.med.miami.edu

Critical Care Fundamentals, American College of Chest Physicians, February 13-15, 2009, Northbrook, Illinois; info and registration via www.chestnet.org (go to education calendar)

Fundamental Critical Care Support, Boone Hospital Center, Columbia, MO, February 20-21; contact Judy Feintuch, CME coordinator, 573-815-3498

Arrythmia Management for the Clinician, Am College Cardiology, Four Seasons Hotel, Philadelphia, PA, April 16-18, www.greatheartdoctors.com/ghd/page297.htm

American Geriatrics Society 2009, Hyatt Regency, Chicago, April 29—May 3, info and registration: www.americangeriatrics.org

47th Annual USC Weil Symposium on Critical Care and Emergency Medicine, May 17-21, Westin Mission Hills, Rancho Mirage, California; 800-USC-1119 or register online: www.peopleware.net/0128 (select course #2480)

COMMENTS FROM MEMBERS

None Received

Please direct all comments, ideas and newsletter contributions to the Editor:

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Please forward this newsletter to Missouri Hospitalists that you might know!