



INFECTIOUS DISEASES NEWSLETTER

February 2014

[T. Herchline, Editor](#)

LOCAL NEWS

ID Fellows

Dr Kunal Desai will be at the VA Medical Center February/March, Miami Valley Hospital in April, OSU for Transplant in May and Miami Valley Hospital in June. Dr. Katelyn Booher will be at Miami Valley Hospital February/March, Children's Hospital in April, and the VA Medical Center May/June.

Dr Desai recently returned from a month with Dr Ram Gopalakrishnan in Chennai, India. Dr Gopalakrishnan was the first graduating fellow of the Wright State University Infectious Diseases Program. Dr Desai will be presenting cases from his trip at a future conference.

Local Disease Activity

For 2013 there were no Class A (immediately reported) diseases reported in Montgomery County. B1 diseases (reported within one business day) reported include aseptic meningitis (41), bacterial meningitis (11), invasive *Haemophilus influenzae* (11), malaria (3), pertussis (167), salmonellosis (35), shigellosis (32), and tuberculosis (9). Class B2 diseases (reported by the end of the work week) reported include campylobacteriosis (27), giardiasis (18), and invasive pneumococcal infection (57). Among these diseases, only pertussis represents a significant change from 2012; there were 32 cases of pertussis reported for 2012.

Influenza illness in Montgomery County Has been high this season (1266 documented influenza A and 29 influenza B) with 112 influenza-associated hospitalizations and 6 deaths through February 8th (week 6). The total number of documented influenza cases is comparable to the number through week 6 last year (1312) and well above levels seen in 2011-12 (18) or 2010-11 (557).

NATIONAL NEWS

Contributed by Kunal Desai, MBBS

Helicase–Primase Inhibitor for HSV-2 Infection

Pritelivir, an inhibitor of the viral helicase–primase complex, exhibits antiviral activity in vitro and in animal models of herpes simplex virus (HSV) infection. The polymerase (UL30), together with its accessory subunit (UL42), function in concert with three subunits of the helicase–primase complex (UL5, UL8, and UL52) and ICP8 to direct the synthesis of viral DNA. Pritelivir interferes with this process by inhibiting the helicase–primase complex. This mechanism gives pritelivir a significant advantage because resistance to it maps to UL5; pritelivir thus remains active against viruses that are resistant to acyclovir, typically because they harbor mutations in the thymidine kinase and DNA polymerase. Phase-3 study of Pritelivir was recently published in the *New England Journal of Medicine*. The study showed that pritelivir significantly reduces the frequency of genital HSV shedding and lesions in otherwise healthy men and women with genital HSV-2 infection. The effect was dose-related, with a daily dose of 75 mg

having the greatest antiviral effect. Although this study was not powered to evaluate the effect of pritelivir on recurrences of symptomatic genital herpes, they did observe significant reductions in the number of days of genital lesions at doses of 75 mg daily and 400 mg weekly that paralleled the trend toward fewer recurrences at these doses. Larger studies will be needed in future to establish the indications for its use in clinical practice.

National Influenza update

5,494 laboratory-confirmed influenza-associated hospitalizations have been reported since October 1, 2013. This translates to a cumulative overall rate of 20.3 hospitalizations per 100,000 people in the United States. Nationally, the percentage of respiratory specimens testing positive for influenza viruses during the week of January 19-25 decreased to 21.1%. CDC has antigenically characterized 978 influenza viruses among which 890 2009 H1N1 viruses, 72 influenza A (H3N2) viruses, and 16 influenza B viruses have been identified. Thus, H1N1 has been predominant strain this year. Of the 5,494 influenza-associated hospitalizations that have been reported this season, more than 60% have been in people 18 to 64 years old.

ACIP Immunization recommendations update 2014

The Hib vaccine recommendations were updated. The vaccine is recommended for certain adults at increased risk for Hib who have not received the vaccine before. Adults who have had a successful hematopoietic stem cell transplant are recommended to receive a 3-dose series of Hib vaccine 6 to 12 months after the transplant regardless of prior Hib vaccination status. Hib vaccination of previously unvaccinated adults with HIV infection is no longer recommended because their risk for Hib infection is low. Being a health care worker is not a specific indication for HPV and Herpes Zoster vaccines.

INTERNATIONAL NEWS

Human infection with avian influenza A (H7N9) virus in China

The first identified cases of human infection with a novel influenza A (H7N9) virus occurred in eastern China during February and March 2013. According to the World Health Organization (WHO), there have been more than 250 confirmed human cases of avian influenza A (H7N9) with more than 50 deaths reported from China since April 2013. Epidemiology of H7N9 outbreak in China is recently published in the New England Journal of Medicine. Although persons in a wide age spectrum were affected (age range, 2 to 91 years), the majority of patients with confirmed H7N9 virus infection were older (median age, 61 years), male (71%), and urban residents (73%). Most patients were hospitalized with severe lower respiratory tract illness, 10 with a case fatality proportion of 34%. The median time from the onset of illness to hospitalization was 4 days, and the median time from the onset of illness to the development of ARDS was 7 days. Follow-up investigations of contacts of patients with confirmed H7N9 virus infection suggest that the risk of secondary transmission of H7N9 virus, including to health care personnel, is low at this time. However, in four family clusters, limited, nonsustained human-to-human transmission of H7N9 virus could not be ruled out and may have occurred.

Case Conference

Contributed by Katelyn Booher, DO

A 41 year-old Caucasian male with history heart murmur since childhood & ongoing crack-cocaine use presented with acute onset sharp, left-sided chest pain. He also noted intractable headache, fever, and chills for one week. He was admitted for presumed non-ST elevation myocardial infarction. Soon after admission, an echocardiogram was obtained for evaluation of ischemic cardiomyopathy, and incidentally a moderate-sized vegetation or mass measuring 1.2cm was found on the aortic valve. A preliminary report was received that one of three blood cultures were growing coagulase negative staphylococci. Speciation was requested; subsequently, all three blood cultures grew *Staphylococcus lugdunensis*. Empiric vancomycin was narrowed to cefazolin based on susceptibilities. The patient remained hemodynamically stable, no congestive heart failure signs or symptoms were apparent, and cardiology advised that emergent valve replacement was not necessary. The patient was discharged home to complete a 6-week course of IV ceftriaxone. The patient returned to the emergency department three days following discharge with signs and symptoms of fulminant congestive heart failure, and was also influenza A positive. He underwent aortic valve replacement soon after admission. Histopathology was consistent with endocarditis, and demonstrated destruction of one of valve leaflets. The patient recovered well, and was again discharged home to complete his course of ceftriaxone.

Discussion

Coagulase-negative staphylococci (CNS) as a group are one of the most common causes of prosthetic valve endocarditis, but also common contaminants. The infectious course tends to be indolent, and less commonly involves native valves. *Staphylococcus lugdunensis*, a species of CNS, however, is substantially more virulent. Perivalvular extension, metastatic infection, and an aggressive course are characteristic for this species of CNS. Despite its aggressive nature, *S. lugdunensis* has a generally favorable susceptibility profile. Differentiating this organism from other CNS can be a challenge. Identification can be achieved by detecting production of ornithine decarboxylase and pyrrolidonyl arylamidase. *S. lugdunensis* is commonly found on the human skin, and has been associated with colonization of the inguinal region. The organism is a rare contaminant in culture. Treatment with standard regimens for endocarditis based on susceptibility profiles is recommended. *S. lugdunensis* is an uncommon but serious cause of bacterial endocarditis.

References:

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2. Liu PY, Huang YF, Tang CW, Chen YY, Hsieh KS, Ger LP, Chen YS, Liu YC. 2010. *Staphylococcus lugdunensis* infective endocarditis: a literature review and analysis of risk factors. *J. Microbiol. Immunol. Infect.* 43:478–484
3. Unusually virulent coagulase-negative *Staphylococcus lugdunensis* is frequently associated with infective endocarditis: a Waikato series of patients. Liang M, Mansell C, Wade C, Fisher R, Devlin G - *N. Z. Med. J.* - May 2012; 125(1354); 51-9
4. Successful daptomycin treatment for *Staphylococcus lugdunensis* endocarditis. Stair B, Vessels B, Overholser E, Zogleman B, Wall BM, Corbett C - *Am. J. Med. Sci.* - Jul 2012; 344(1); 64-6

BUG OF THE QUARTER

Contributed by W. Grant Starrett, M.D.

This article reviews the more obscure organisms which are less commonly isolated in clinical specimens. Please contact me at wgstarrett@premierhealth.com if you come across an isolate that may fit in this category.

Organism: *Mycobacterium neoaurum*

Clinical Data:

A 51 year-old female with a history of CLL and previous line infections presented to the hospital with sepsis and was admitted. She had a left chest port which had been placed nine years previously, but cultures remained without growth as she rapidly defervesced on empiric antibiotics. She was sent home on amoxicillin/clavulanic acid and did well. Her blood cultures grew atypical “Gram positive cocci” following discharge, and the isolate was eventually identified as *Mycobacterium neoaurum*. The patient did not return multiple telephone calls, but eventually followed up with her oncologist at an outside facility. She reported fevers and chills after completing antibiotics, and blood cultures were repeated at that time. She took one dose of levofloxacin but was admitted the following day at her oncologist’s request when her routine blood cultures were growing “Gram positive bacilli”. The preliminary result of the isolate is *mycobacterium neoaurum*, and confirmation by genetic sequencing is pending. The port was subsequently removed, and standard cultures of the blood and port tip were negative. AFB blood cultures prior to port removal are without growth at the time of this writing. The patient was discharged on levofloxacin and doxycycline based on susceptibility testing of the original isolate.

Taxonomy

Family: *Mycobacteriaceae*

Genus: *Mycobacterium*

Species: *neoaurum*

Associated Diseases:

1. Nosocomial bacteremia
2. prosthetic valve endocarditis
3. skin/soft tissue infection

Description:

Mycobacterium neoaurum is a rapidly growing, scotochromogenic mycobacteria that was originally described in 1972 in Japan, isolated at that time from both soil and sea water. It was thought to be non-pathogenic until reports of bacteremia with this organism were published in 1988 in cancer patients with intravenous catheters. Isolated reports of other infections in skin and elsewhere have also been described, similar to the more commonly encountered “rapid growers” (*M fortuitum*, *M chelonae*, *M abscessus*). In contrast to these non-pigmented species, *M neoaurum* colonies are scotochromogenic and may be detected on routine aerobic blood culturing systems, as occurred in this case. Isolation from clinical specimens may also represent contamination. Fortunately, the susceptibility profile of this organism is more favorable compared to those of other rapidly growing mycobacteria, and *M neoaurum* is commonly susceptible to macrolides, fluoroquinolones, aminoglycosides and tetracyclines. Removal of any invasive device and combination treatment for several weeks is typically successful in eradicating the infection.

Resources:

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5. Washer L, *et al.* *Mycobacterium neoaurum* bloodstream infection: Report of 4 Cases and Review of the Literature; *Clinical Infectious Diseases* 2007; 45:e10–3.

Upcoming Events

February 2014

5	Journal Club	MVH 6NW
26	Case Conference	GDAHA

March 2014

5	Journal Club	MVH 6NW
3-6	Conference on Retroviruses and Opportunistic Infections	Boston, MA
26	Case Conference	GDAHA

April 2014

2	Journal Club	MVH 6NW
10-12	ACP Internal Medicine 2014	Orlando, FL
30	Case Conference	GDAHA

May 2014

7	Journal Club	MVH 6NW
10-13	European Congress of Clin Micro & Inf Dis	Barcelona, Spain
28	Case Conference	GDAHA
6-10	European Society for Paediatric ID	Dublin, Ireland

June 2014

4	Journal Club	MVH 6NW
7-9	Association for Professionals in Infection Control	Anaheim, CA
25	Case Conference	GDAHA

September 2014

6-9	ICAAC	Washington, DC
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October 2014

8-12	IDSA/ID Week	Philadelphia, PA
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