NEISSERIA, HAEMOPHILUS, and BORDETELLA

Date: Wednesday, September 5, 2018

Suggested Reading Assignment: Murray et al., Medical Microbiology, 8th ed., 2016. Chapter 23, Neisseria gonorrhoeae and Neisseria meningitidis; Chapter 24; Chapter 29, Bordetella

LEARNING GOAL:
After completing the assigned reading and attending the lecture, you will be able to describe the unique structural, microbiologic, clinical, and epidemiologic characteristics of Neisseria, Haemophilus, and Bordetella as well as the appropriate laboratory tests to diagnose infections with these bacteria.

LEARNING OBJECTIVES
To achieve the goal of this lecture you will:
1. Distinguish the unique culture and growth characteristics of Neisseria from that of other bacteria
2. Identify the major virulence factor of Neisseria meningitidis
3. Identify the primary mode of transmission of Neisseria meningitidis
4. From a clinical description, recognize the two most common clinical presentations of disease caused by Neisseria meningitidis
5. Recognize the three proteins that mediate Neisseria gonorrhoeae host cell attachment and penetration and the importance of antigenic variation
6. Identify the primary mode of transmission of Neisseria gonorrhoeae
7. Distinguish between primary (localized) and secondary (disseminated) disease caused by Neisseria gonorrhoeae
8. Choose the best laboratory test for the diagnosis of Neisseria gonorrhoeae
9. Identify the unique structural and culture characteristics of Haemophilus species
10. Distinguish the pathogenic and epidemiologic significance of encapsulated versus non-encapsulated Haemophilus influenzae strains
11. Identify the primary mode of transmission of Haemophilus influenzae
12. Identify the factor responsible for the dramatic decline in incidence of Haemophilus influenza type B disease in the U.S.
13. Differentiate between the clinical manifestations of invasive and non-invasive disease caused by Haemophilus influenza
14. Identify at least two toxins important for the pathogenesis of Bordetella pertussis infection and their mechanisms of action
15. Identify the primary mode of transmission of Bordetella pertussis
16. Recognize the unique separate clinical stages and manifestations of infection with Bordetella pertussis
17. Identify the methods of diagnosis of Bordetella pertussis infection
18. Given an immunologic history and patient’s age, determine if vaccination with pertussis vaccine is recommended