Host Defenses Learning Objectives

By the end of the course, the student should be able to:

Knowledge

1. (K6, K7) Discuss the basic cellular reactions to injurious stimuli and identify reversibly and irreversibly injured cells.

2. (K5, K7) Explain the mechanisms underlying acute and chronic inflammation, immunopathology, hemostasis and thrombosis, and neoplasia.

3. (K7) List the specific morphologic characteristics of acute and chronic inflammation, hypersensitivity reactions, venous and arterial thrombi, and benign and malignant neoplasia.

4. (K1) Identify the cellular and humoral components of the immune system.

5. (K5, K7) Describe the effector and regulatory mechanisms underlying the innate and adaptive immune responses to bacterial and viral pathogens, transplanted organs and cancer.

6. (K1, K4, K5, K6) Explain the procedures and principles by which microorganisms are isolated and classified.

7. (K5) Describe bacterial physiology, including properties of the plasma membrane and cell wall, functions of pili and flagella, and growth requirements.

8. (K4, K5, K6) Define and discuss the clinical importance of normal flora.

9. (K5) Summarize bacterial gene structure, replication, and transcription.

10. (K5, K7) List the major pathogens associated with respiratory, wound, soft tissue and bone infections, and urinary tract infections.

11. (K5, K6, K7) Describe bacteremia and sepsis.

12. (K4, K5, K6) Explain the principles by which viruses are classified and virus-host interactions.

13. (K5, K7, K8) Describe the biology of HIV, opportunistic infections, and current vaccine strategies.

14. (K4, K5, K6) Describe general characteristics of fungi and molds, and list clinical conditions associated with fungal infections.

15. (K8) Explain pharmacologic principles of dose-response and selective toxicity; drug absorption, distribution, and excretion; drug biotransformation, induction, and inhibition;
drug interactions in patients; pharmacokinetics; tolerance and dependence; anti-neoplastic treatment; and maternal-fetal interactions.

16. (K8) Explain the mechanisms of action of the major classes of antibiotics and understand the problem of drug resistance.

17. (K8) Explain the mechanisms of action of the major classes of anti-viral and anti-fungal drugs.

18. (K8, K11, K13) Recognize strengths and limitations of the pre-marketing drug approval process and post-marketing surveillance.

19. (K8) Explain the specific pharmacology (generic and brand name, the chemical type and pharmacologic class, its uses, the mechanism of action (if known), side effects, contraindications, clinically significant drug interactions, and pharmacokinetic considerations relevant to patient dosing) for drugs described in the PBL exercises.

Skills

20. (S2, S3, S10, A9, A10) Identify useful and reliable sources of drug information.

21. (S2, S3) Search, retrieve, and critically analyze medical information from various evidence-based sources.

22. (S1, S2, S3, S8) Analyze, distill, and synthesize clinical and scientific information collaboratively as a team – from generating a hypothesis about a medical problem, exploring these problems, and reaching a reasoned conclusion.

23. (S2, S3, S10, A9, A10) Search various electronic and other databases and resources for evidence-based studies and critically evaluate their usefulness and clinical relevance to the medical problem at hand.

24. (S12) Demonstrate enhanced communication and interpersonal skills with patients and with colleagues in a small group setting.

Attitudes

25. (A2) Demonstrate sensitivity to patients’ medical and psychosocial needs.

26. (A5) Respect the views, time, and participatory rights of classmates and faculty in small and large group teaching settings
How Students are Assessed

This course uses a variety of methods to assess students throughout the course that include both formative and summative evaluation. Methods for assessing student achievement of course learning objectives include weekly quizzes, Triple Jump examination, and attendance, participation, and quality of contributions in journal club and problem-based learning small group sessions.

Note: K, S, and A, with corresponding numbers in parentheses (e.g., K1, S2, A4), refer to Weill Cornell Medical College’s Educational Objectives of the program leading to the MD degree found at http://weill.cornell.edu/education/curriculum/edu_obj.html