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Commentary

Respiratory Diseases and Antimicrobial Resistance

Charlotte Doidge*

Department of Medicine and Diagnostic Sciences, Cornell University, Ithaca, New York, USA

DESCRIPTION

Lower Respiratory Tract Infection (LRTI) is used as a synonym for pneumonia but can also be applied to other types of infection including lung abscess and acute bronchitis. Symptoms include shortness of breath, weakness, fever, coughing and fatigue. A routine chest X-ray is not always necessary for people who have symptoms of a lower respiratory tract infection.

Pulmonary mucormycosis

Lower respiratory tract infection develops most frequently in severely immunocompromised patients, particularly those with hematological malignancies and allogeneic HSCT. Key factors associated with development of pulmonary mucormycosis include prolonged and profound neutropenia, corticosteroid use, and GVHD.81–84 Pulmonary disease also develops in solid organ transplant recipients.85–87. Pulmonary mucormycosis may appear radiologically as solitary lung nodules, segmental or lobar consolidation, halo signs, and cavitary or bronchopneumonic lesions. Persistent fevers and pulmonary infiltrates refractory to broad-spectrum antibacterial agents in a compromised patient should suggest fungal pneumonia. As the presentation of pulmonary mucormycosis is similar to that of invasive pulmonary aspergillosis, a diagnostic procedure such as bronchoalveolar lavage (BAL) is important.

The pulmonary lesions of mucormycosis typically are rapidly progressive in compromised hosts. Invasion of pulmonary vessels might also additionally cause thrombosis and pulmonary infarcts. Infection might also additionally increase across tissue planes to contain the chest wall, pericardium, myocardium, superior vena cava, and diaphragm.88, 89 Invasion of the great vessels may cause aneurysm formation with deadly hemoptysis, ninety three as well as endobronchial ailment with airway obstruction.ninety five High-resolution CT is advanced to standard chest radiographs for early analysis and for delineating the extent of pulmonary and mediastinal involvement. The air crescent and halo signs, which can be normally related to invasive pulmonary aspergillosis, will also be observed in pulmonary mucormycosis. As decrease breathing tract infection may arise alone, concomitant with sinus ailment, or as a part of a disseminated process, radiological evaluation of extrapulmonary sites have to be taken into consideration in the initial evaluation.

Antimicrobial resistance

Resistance to antimicrobials is a natural biological phenomenon. The introduction of every antimicrobial agent into clinical practice has been followed by the detection in the laboratory of strains of microorganisms that are resistant, i.e. able to multiply in the presence of drug concentrations higher than the concentrations in humans receiving therapeutic doses. Such resistance may either be a characteristic associated with the entire species or emerge in strains of a normally susceptible species through mutation or gene transfer. Resistance genes encode various mechanisms which allow microorganisms to resist the inhibitory effects of specific antimicrobials. These mechanisms offer resistance to other antimicrobials of the same class and sometimes to several different antimicrobial classes.

Deaths from acute respiration infections, diarrhoeal diseases, measles, AIDS, malaria and tuberculosis account for greater than 85% of the mortality from contamination worldwide. Resistance to first-line pills in maximum of the pathogens inflicting those sicknesses stages from 0 to nearly 100%. In a few times resistance to second- and thirdline agents is critically compromising remedy outcome. Added to that is the good sized international burden of resistant hospital-acquired infections, the rising issues of antiviral resistance and the growing issues of drug resistance in the neglected parasitic diseases of negative and marginalized populations. Resistance is best simply starting to be considered as a societal trouble and, in economic terms, as a negative externality in the health care context. Individual selections to use antimicrobials (taken through the customer alone or through the decision-making combination of health care worker and patient) regularly forget about the societal perspective and the perspective of the health service.

Correspondence to: Charlotte Doidge, Department of Medicine and Diagnostic Sciences, Cornell University, Ithaca, New York, USA, E-mail: charlotte@gmail.com

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