Antibiotic abuse and development of bacterial resistance

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Abstract

Antibiotic abuse and the Resistance to antimicrobial agents is a major health problem that affects the whole world. Providing Information on the past state of antimicrobial resistance in Libya may assist the health authorities in addressing and reduce the problem more effectively in the future. the aim of this literature review is to detect the rate of the development of the antibiotic resistant bacteria and the antibiotic abuse by either the healthcare providers or the patients. data and information were obtained from 1 article and 5 published studies about Libya by using (PubMed) and (Google scholar) using the terms ‘antibiotic resistant bacteria’ ‘multidrug resistant bacteria in developing countries ‘antibiotic abuse in north Africa’ however the data on Libya were very scarce. according to the data we examined in each study they showed evidences of the multidrug resistant bacteria isolated and cultured from different sources (urine, burns, pus, sputum, blood ,patient's environment) a total of 1927 sample were collected and reviewed, results showed a high resistant strains of (Mycobacterium tuberculosis, Escherichia coli, klebsiella, pseudomonas, staph aureus, proteus, Acinetobacter baumannii ) these bacteria showed a high rate of resistance to the majority of antibiotics including (Augmentin, ceftriaxone, ciprofloxacin, ceftazidim ) other bacteria were found to be resistant to (Gentamicin, Amikacin) and few of them were even registered to be fully resistant to antibiotics including (meropenem) and most of them were found to be highly sensitive to (colistin).

Introduction

The term of multidrug-resistant (MDR) is defined by the (NIH) as the acquired non susceptibility to at least one agent in three or more antimicrobial categories, other terms are extensively drugresistant (XDR) and the pandrug-resistant (PDR) these are more devastating and dangerous to community than (MDR), the problem of the emergence of antibiotic resistance is primarily due to excessive and often unnecessary use of antibiotics in humans and animal agriculture without prescription from healthcare providers.

Analysis

This type of bacteria is a common community acquired infection and a well-established nosocomial pathogen a gram- positive strain named staphylococcus aureus is responsible for most of infection due to the enormous beta-lactams consumption it developed resistant against Beta-lactam group of antibiotics including (penicillin, penams).

The rapid emergence of resistant bacteria is occurring worldwide, endangering the efficacy of antibiotics, which have transformed medicine and saved millions of lives.The antibiotic resistance crisis, has been attributed to the overuse and misuse of these medications, as well as a lack of new drug development by the pharmaceutical industry due to reduced economic incentives and challenging regulatory requirements.

Conclusion

There were no restrictions on antibiotic-prescribing habits. However, during the education phase, physicians were informed about the increased risk for the selection of bacterial resistance associated with the overuse of the third-generation cephalosporins and carbapenems, as well as the potential benefits of their replacement (when appropriate) with aminopenicillin-sulbactam or with the available fourth- generation cephalosporin, cefepime.