عنوان مقاله:

Assessment of the relationship between Klebsiella pneumoniae, urinary tract infections and virulence factors

محل انتشار:

بیستمین کنگره بین المللی میکروب شناسی ایران (سال: 1398)

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خلاصه مقاله:

Introduction and objectives: Bacteria belonging to the genus Klebsiella frequently cause human infections, including life threatening nosocomial infections. In particular, Klebsiella pneumoniae, accounts for a significant proportion of hospital-acquired urinary tract infections (UTI), pneumonia, septicemias, and soft tissue infections. Because of their ability to spread rapidly in the hospital environment, these bacteria tend to cause nosocomial outbreaks. As opportunistic pathogens, the organism primarily attack immunocompromised individuals who are hospitalized and suffer from severe underlying diseases such as diabetes mellitus or chronic pulmonary obstruction. This study was undertaken to assess the frequency of K. pneumoniae in UTI in in-patients, demographic data and the virulence factors involved. Materials and Methods: The clinical study was conducted at the Microbiology unit of Sina hospital s Laboratory for the period 2018- 2019. Bacterial isolation and identification were carried out following standard cultural and biochemical techniques. The pertinent information on any underlying disease and other demographic data were collected and analyzed. Susceptibility profiles of pathogens gathered were determined according to CLSI standards. Capsule associated virulence factors were studied by performing multiplex PCR. Results: Among the total isolates collected (n=188), the highest resistance was found for cefazolin (95.8%), followed by ceftazidime (91.4%). None of the isolates showed resistance to colistin. Around 43% of the isolates were found to produce extended spectrum beta-lactamase. Serotype K54 was the most prevalent. K5 and K20 serotypes had a higher prevalence in clinical specimens collected from the females than males ($p< 0.05$). In contrast, the distribution of K54 serotype with five capsule associated virulence factors did not differ in both genders. Conclusion: Information about the distribution of capsular serotypes in UTI, demographic details and pattern of antibiotic resistance could help physicians for prescribing the appropriate treatment.

کلمات کلیدی:

Klebsiella pneumoniae, Serotype, Capsule, Virulence, Antibiotic resistance