



Changing resistance Patterns of Nosocomial *Klebsiella pneumoniae* Strains: Ten Years Experience

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Background

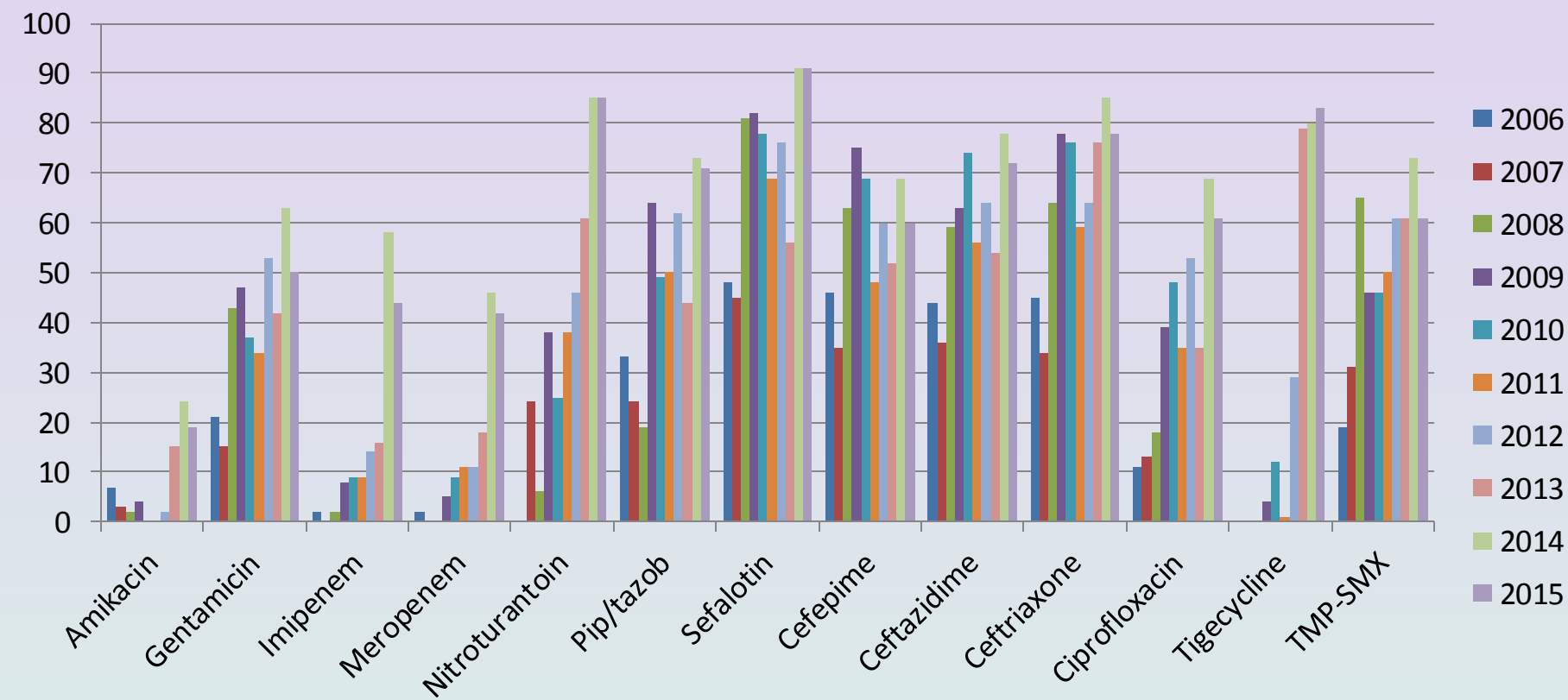
Klebsiella pneumoniae is an important and emerging pathogen in health care settings. Last decades, a progressive increasing in antimicrobial resistance has been detected among *Klebsiella pneumoniae* isolates. The study was aimed to assess the resistance rates of nosocomial *Klebsiella pneumoniae* isolates in yearly basis through 10 years in Ankara Training and Research Hospital.

Material/methods

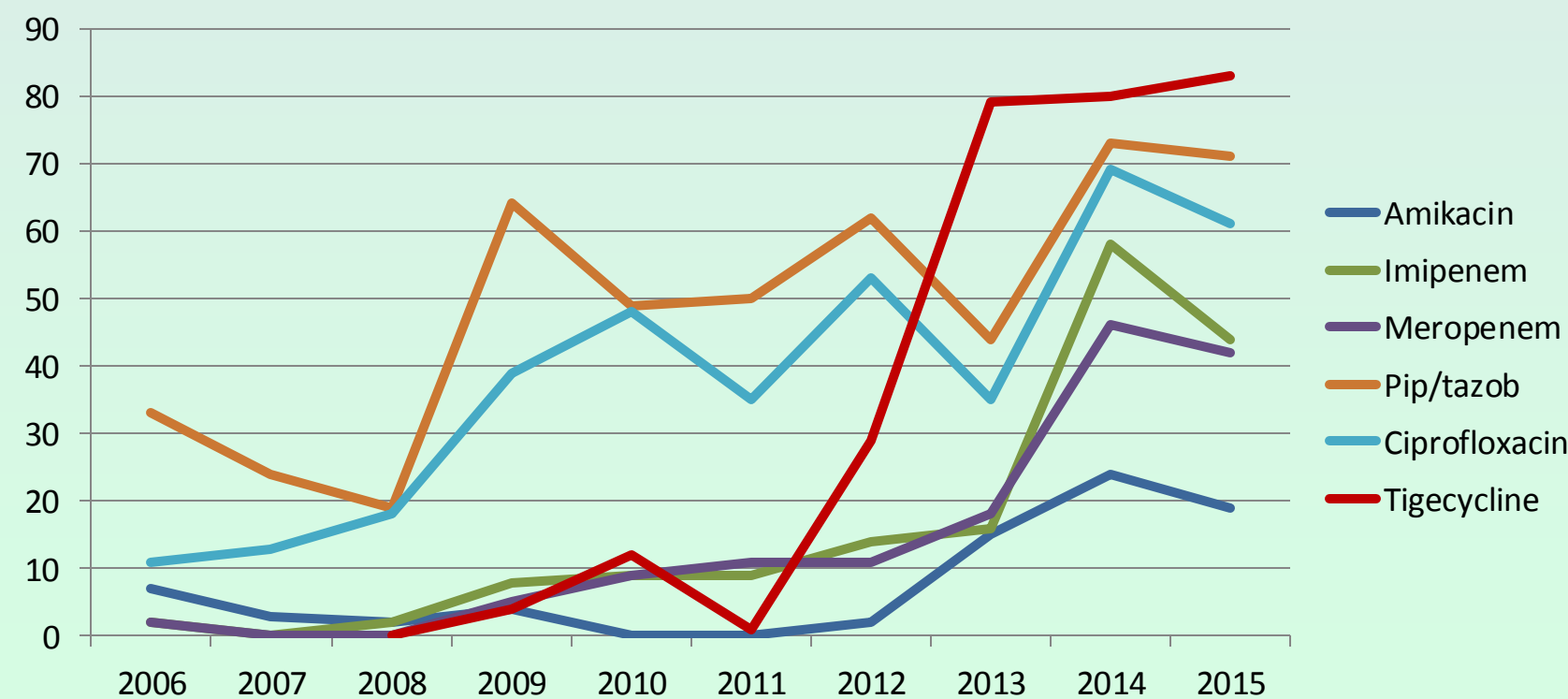
Hospital-wide laboratory-based surveillance data collected prospectively between January 2006 and October 2015 was evaluated. Nosocomial infections were defined according to the Centers for Disease Control and Prevention's definitions. Antimicrobial susceptibility was performed according to the National Committee for Clinical Laboratory Standards and Clinical and Laboratory Standards Institute. Evaluated antimicrobials were amikacin, gentamicin, imipenem, piperacillin-tazobactam, cefazolin, ceftriaxone, cefepime, ciprofloxacin and trimethoprim-sulfamethoxazole and tigecycline.

Results

The results of the resistance changes are shown in the Figure 1 and 2. Evident gradual increase in resistance for all years was seen for gentamicin, cephalothin, ceftriaxone, cefepime and piperacillin-tazobactam. Amikacin and ciprofloxacin had a former increase but decline in recent years. A dangerous increase in carbapenem resistance has been detected. Currently the antimicrobials having resistance less than 50% are amikacin, gentamicin, imipenem and tigecycline



Graph 1. Antimicrobial resistance of antibiotics according to years



Graph 1. Changing antimicrobial resistance pattern of antibiotics according to years

Conclusions

Amikacin, tigecycline and imipenem have definitely less resistance frequencies. Antimicrobial use in case of empirical therapy can be guided by such local data and the data can supply a rational support for decision in overall use of antimicrobials. One charming result is around 90% recent resistance to cefazolin, a member of first generation cephalosporins persistently used for surgical prophylaxis. Carbapenem resistance could be problematic.