

Could the use of 3rd-generation cephalosporins and fluoroquinolones be limited in the Emergency Department ?

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Background: Third-generation cephalosporins and fluoroquinolones are particularly prone to promote bacterial resistance to antibiotics. By replacing these agents with antibiotics with a more narrow spectrum, Emergency Physicians could limit their use. The incidence of prescriptions of cephalosporins and fluoroquinolones in the Emergency Department (ED), and the proportion of prescriptions that could be avoided are poorly known.

Objectives : To assess the incidence of prescription of 3rd generation cephalosporins and fluoroquinolones in the ED, and the proportion of prescriptions that could be avoided.

Methods : Retrospective study of the prescriptions of fluoroquinolones and intra-venous 3rd generation cephalosporins for adult patients presenting in a French ED between november 2012 and october 2013. Avoidable prescriptions – i.e. prescriptions that could have been replaced by an agent with a more narrow spectrum - were defined according to national antibacterial therapy guidelines.

Results : The incidence of prescriptions of fluoroquinolones and 3rd generation cephalosporins per 1000 passages was 23 and 4, respectively. We evaluated every prescription of fluoroquinolone (n=147), and a random sample of prescriptions of 3rd generation cephalosporins (20 per month, i.e. 240 out of 819). Patients mean age was 61 ± 23 y. Main indications for 3rd generation cephalosporins were a Lower Respiratory Tract Infection (34%), a Urinary Tract Infection (24%), a intra-abdominal infection (16%). Main indications for fluoroquinolones were a Urinary Tract Infection (61%), a Genital Tract Infection (10%), a Lower Respiratory Tract Infection (5%). Forty percent (40 %) of 3rd-generation cephalosporin prescriptions were avoidable, as were 26% of fluoroquinolone prescriptions. Combining 3rd-generation cephalosporins and fluoroquinolones, 35% of prescriptions were avoidable.

Conclusion : Prescriptions of 3rd generation cephalosporins and fluoroquinolones could be restricted by 35% in the ED, and replaced by antibiotics with a more narrow spectrum. This result has to be validated by a multicentric study, and would support the implementation of antibiotic stewardship programs in the ED.