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Abstract (publication only)

Nosocomial outbreak of *Klebsiella pneumoniae* producing extended-spectrum beta-lactamase and OXA-48 at Carlos Haya Regional Hospital in Málaga (Spain)

M.C. Mediavilla Gradolph, I. De Toro Peinado, A.M. Fernandez Sanchez, L. Valiente de Santis, M.P. Bermudez Ruiz, J.A. Porras Ballesteros, J.M. Reguera Iglesias, B. Palop Borrás* (Malaga, ES)

Introduction: In recent years, the resistance to carbapenemases in Enterobacteriaceae has significantly increased. In October 2011 two strains of *Klebsiella pneumoniae*, ESBL CTM-M-15 and Carbapenemase OXA-48, were isolated in the Intensive Care Unit (ICU) of our hospital. Since then, active surveillance measures were undertaken, establishing further infection control procedures, both first and second level (contact isolation in a single room, hand hygiene, surface disinfection, etc. and intestinal decontamination, respectively). **Objective:** To describe the microbiological characteristics of a nosocomial outbreak of *K. pneumoniae* OXA-48/CTX-M-15 detected in a third level hospital during one year. **Methods:** Samples were obtained from October 2011 to October 2012. Species identification and antibiotic-susceptibility testing were performed using Vitek2® (Biomérieux) and Wider® (Becton Dickinson). Carbapenems sensitivity studies, using E-test® (Biomérieux) and Modified Hodge Test, were performed on all the strains identified as *K. pneumoniae* with decreased sensitivity to ertapenem (IMC >0.5 µg/ml). Furthermore, since June a PCR technique to detect carbapenemases was performed by RealCycler OXVI® (VIM/OXA-48) using Smartcyler Cepheid, which provides results in approximately three hours. All strains were sent to the National Microbiology Center (NMC) for genetic characterization. **Results:** 166 strains of ESBL *Klebsiella pneumoniae* with decreased sensitivity to ertapenem were studied. They were isolated in 104 patients, were from:46.5%ICU, 17%Internal Medicine and 11% Infectious Disease Unit. Sample distribution was as follows: 41.5% rectal exudates, 22% respiratory samples, 17.1% urine samples, 8.1% blood cultures. Strains were identified as ESBL CTX-M-15. 82 of them were positive for the Hodge Modified test and were characterized as OXA-48. Upon availability of the RealCycler OXVI® (VIM/OXA-48) test with Smartcyler Cepheid kit, 61 samples were tested using this method, resulting in 24 positive cases. Our results were 100% concordant with those of the National Microbiology Center. **Conclusions:** The ICU is the main department where these multiresistant strains have been isolated. Rectal exudates were the samples which presented most frequent isolation of the strains. The RealCycler OXVI® (VIM/OXA-48) kit with Smartcyler Cepheid presents complete concordance with the Hodge Modified Test. This allows us to make quicker decisions, regarding patient isolation and therapeutic approach.