

P1530

Abstract (poster session)

Surfing on the large sea of carbapenemases

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Objectives: The spread of carbapenemase-producing (CP) Enterobacteriaceae (CPE) is matter of concern worldwide. Even if different genera of Enterobacteriaceae can harbour carbapenemase genes, this resistance treat has become more common in *Klebsiella pneumoniae* (KP) isolates, which can express different resistance mechanisms such as KPC, IMP, VIM, NDM, OXA48 etc.. Recently different KPC+ KP outbreaks were described in different hospitals of our region. Guidelines for preventing the diffusion of CP-KP, based on the evidences of literature, were developed by the Infectious Risk Unit of the Agenzia Sanitaria e Sociale Regionale and were applied from last August. After having discovered that in a healthcare facility two patients were colonized by CP-KP (index cases), a surveillance protocol based on rectal screening was performed on the patients that had been in contact with these two index cases. **Methods and results:** CP-KP were isolated from three different patients other than the two index cases; the confirmatory test was initially based on the modified Hodge test. When in a later time the laboratory implemented the confirmatory tests using the disk diffusion synergy test, one of the two index cases appeared to be colonized by a KPC+-KP, whereas the other one was colonized by a metallo-beta-lactamase (MBL) producer strain. The phenotypic data were confirmed by molecular methods for the KPC producer strains, whereas the MBL genes are currently under definition through molecular tests. The three patients colonized by CP-KP had all MBL+ strains. In this case, only the staff that had in charge the MBL+ patient was responsible of the spread (although contained) of the microorganism. After this small outbreak, we documented single cases of colonization and to date we have recognized 5 patients with KPC+-KP and 10 patients harbouring MBL+-KP. Strain typing using the ERIC-PCR technique is currently in progress. **Conclusion:** Although the small number of cases, our experience demonstrates that the problem of the spread of CPE can be quite complex. The possible diffusion of different resistance genes should be always considered. To correctly evaluate the epidemiology of the strains and to better manage the outbreaks, it is mandatory that the microbiology Lab performs immediately the appropriate phenotypic tests to detect the type of carbapenemases involved. Strain typing could be also encouraged to define the epidemiology even in small clusters.