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Paper Poster Session
Emergence and worldwide outbreaks of carbapenemase-producing bacteria

Retrospective study on prevalence of Klebsiella pneumoniae carbapenemase–producing (Kp cp) bacteria at the S. Giovanni addolorata hospital in Rome

Paola Maria Placanica*[1], Rita La Mancusa[2], Mariarosa Gaudio[2]

[1]*Azienda Ospedaliera San Giovanni Addolorata, U.O.C. Patologia Clinica, Dipartimento DI Medicina Dei Servizi, Roma, Italy*

[2]*Az. Ospedaliera San Giovanni Addolorata, U.O.C. Patologia Clinica, Medicina Dei Servizi, Roma, Italy*

Background: The aim of this study was to monitor the prevalence of *Klebsiella pneumoniae* Carbapenemase-Producing (Kp CP) in our hospital over a period of almost four years. Evaluate, in the first 10 months of 2015, in the strains isolated from blood cultures the presence of the mechanism of resistance to carbapenems with molecular tests and verify the effectiveness of surveillance cultures for searching Kp CP (rectal swab).

Material/methods: It was considered a period from January 2012 to October 2015.
The bacteria isolated in culture were identified and evaluated the sensitivity testing with automated VITEK 2 (BioMerieux), blood cultures were processed by BACTEC 9240 (BD).
For the strains isolated from blood culture, phenotypically resistant to carbapenems, the presence of carbapenemases was confirmed by the use of a Real Time PCR able to detect the mains carbapenemases described in *K. pneumoniae* (KPC, VIM, NDM, OXA 48) (GeneXpert CEPHEID).
The rectal swabs for surveillance cultures were processed by sowing in chromogenic medium (CARBA-BioMerieux) and then phenotyped.

Results:

YEAR	*K. pneumoniae* strains isolated	Strains # Kp CP	Strains % Kp CP
2012	610	347	56,9
2013	672	279	41,5
2014	748	277	37
Jan - Oct 2015	588	158	26,9

In the year 2012 were isolated # 610 strains of *K. pneumoniae,* of which # 347 (56.9%) were resistant to carbapenems; in the year 2013 # 672 strains of which # 279 (41.5%) resistant; in the year 2014 # 748 strains of which # 277 (37%) resistant and in the first 10 months of 2015 # 588 strains of which # 158 (26.9%) resistant.
In January - October 2015 strains of *K. pneumoniae* isolated from blood cultures were # 45 strains of which 17 (37.8%) resistant to carbapenems, this molecular investigation has confirmed for all isolates the presence of the KPC gene.
In the same period Kp CP was, also, isolated in # 53 / 697 (7.6%) rectal swabs surveillance.

Conclusions: Our data confirm, absolutely, a high proportion of Kp CP isolated, according to the literature, althou showing a decrease over the years.
Furthermore, in the period from January to October 2015 showed an average rate of isolations from all biological samples lower than that obtained from blood cultures.
This is the result both of implementation, over the years, of surveillance programs designed to detect colonization and for the high number of requests for surveillance cultures.