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E0276 Bacteria and resistance to antibiotics associated with hospital mortality, Marseille, France

Diallo Ousmane Oumou[1], Thérèse Coumba Dieng[2], Hervé Chaudet[3], Cédric Abat[4], Philippe Colson[3], Frederique Gouriet[3], Pierre-Edouard Fournier[3], Jimeno Marie-Therese[6 6], Jean-Marc Rolain*[5], Didier Raoult[3]

[1]IHU MEDITERRANEE INFECTION, PATHOLOGIE HUMAINE, Marseille, France, *[2]IHU MEDITERRANEE NFECTION, MALADIES INFECTEIUSES, MARSEILLE, France*, *[3]IHU MEDITERRANEE INFECTION, MALADIES INFECTEIUSES, MARSEILLE, France*, *[3]IHU MEDITERRANEE INFECTION, MALADIES INFECTEIUSES, MARSEILLE, France*, *[3]IHU MEDITERRANEE INFECTION, MALADIES INFECTEIUSES, MARSEILLE, France*

Background: Nowadays, antibiotic resistance is a main public health topics. Several studies was estimated the mortality due to bacterial resistance by mathematical methods, the real burden is not yet known. We present the results of monitoring the bacteria and resistance to antibiotics associated with hospital mortality of a one-year using the surveillance system Marseille Antibiotic Real-time Monitoring System (MARSS).

Materials/methods: Marseille area counts nearly 2 million inhabitants. Bacterial and antibiotics resistance data were obtained using our Marseille Antibiotic Real-time Surveillance System (MARSS). The mortality was generated from the medical information service from Timone hospital from November 2016 to November 2017. The R software used for statistical analysis.

Results: Over the 1-year period of the study, the medical information system recorded 2,611 deaths. Of these, bacteriological analysis was performed for 406 (16%) outpatients in our laboratory. Overall, 2.647 bacterial species were isolated: urine (674; 25.47%), blood (659; 24.9%), expectoration (621; 23.47%), biopsies (181; 6.84). %), otorhinolarynological samples (45; 1.74%), stools (21; 0.8%), cerebrospinal fluid (21; 0.8%), genital specimens (19, 0.72%), other specimens (406; 15.34%). Overall, the top 10 most frequent bacterial species were *Escherichia coli* (361;15.3%), *Staphylococcus aureus* (242; 10.25%), *Pseudomonas aeruginosa* (233; 9.88%), *Klebsiella pneumoniae* (209; 8.86%), *Staphylococcus epidermidis* (186; 7.88%), *Enterococcus faecalis* (135; 5.72%), *Enterobacter cloacae* (122; 5.17%), *Enterococcus faecium* (84; 3.56%), *Proteus mirabilis* (50; 2.12), *Staphylococcus haemolyticus* (45 ; 1.91%). The gram-negative infections were responsible for 1.265 (53.62%).

Among the invasive samples (bacteremia, meningitides and biopsie), nosocomial infections were 254 (29.81%) with *Escherichia coli* (42; 16.2%), *Staphylococcus aureus* (29; 11.46%), *Staphylococcus epidermidis* (26; 10.28%), *Klebsiella pneumoniae* (16; 6.32%), *Streptococcus pneumoniae* (11; 6.32%), *Enterococcus faecalis* (10; 3.95%), *Staphylococcus hominis* (9; 3.5%), *Staphylococcus haemolyticus (*6; 2.37%), *Enterobacter cloacae* (6; 2.37%) and *Pseudomonas aeruginosa* (6; 2.37%) being the most frequent species.

For invasive infections, *Staphylococcus aureus* was resistant to oxacillin (13%), *Enterococcus faecium* and *Enterococcus faecalis* to glycopeptides (3.3%), *Escherichia coli* to third generation cephalosporins (19.35%), *Klebsiella pneumoniae* to third-generation cephalosporins (53.75%) and carbapenems (3.75%), *Pseudomonas aeruginosa* to Carbapenem (48.97%).

Conclusions: Our monitoring tool was used to monitor the number of deaths in real time and to assess bacterial resistance daily.