

Ten years of surveillance and control of Klebsiella pneumoniae hospital acquired bloodstream infections: the experience from San Martino Policlinic Teaching Hospital in Genoa, North-West Italy

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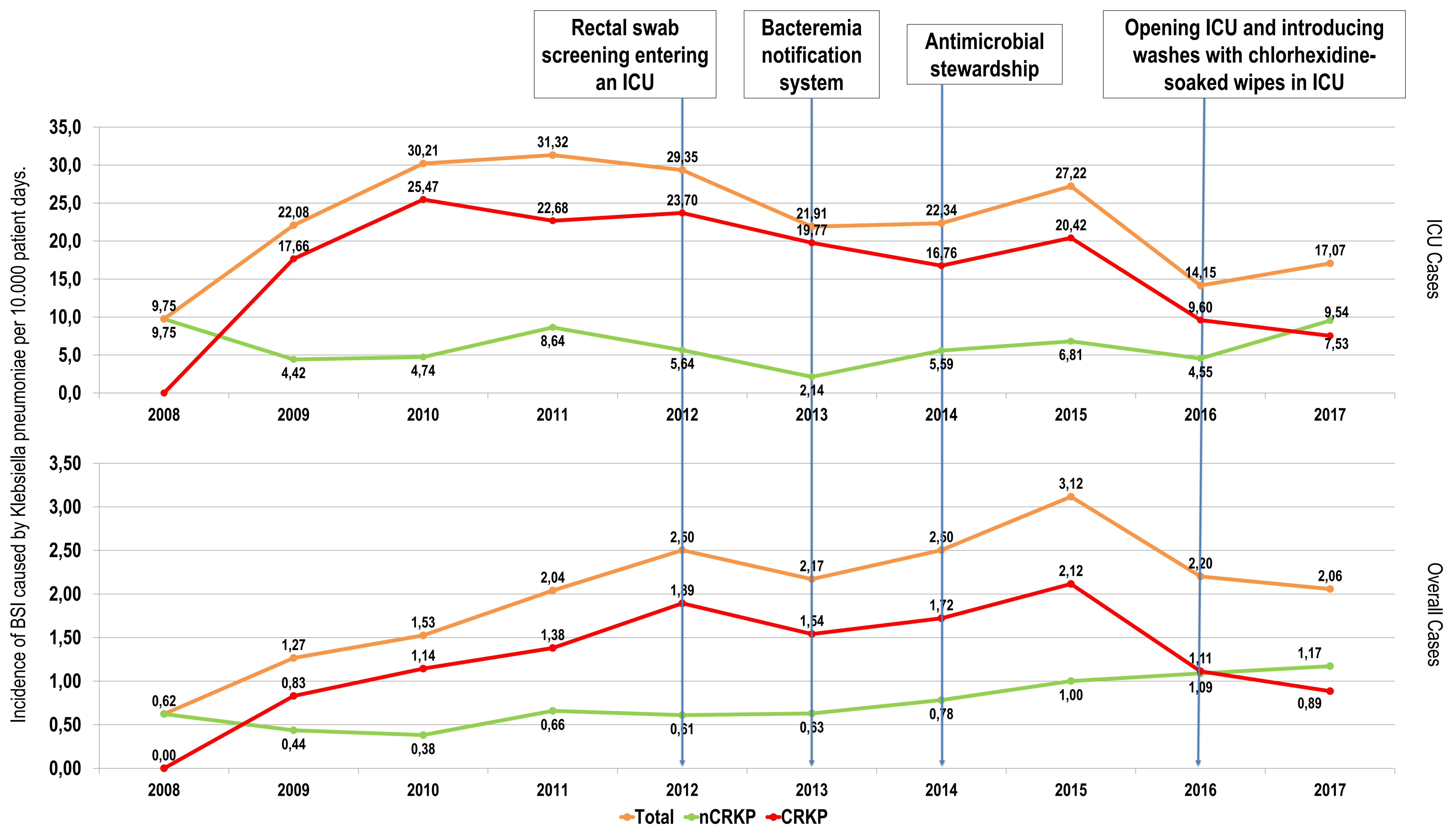
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Background. Effective strategies are needed to reduce the burden of multidrug resistant Klebsiella pneumoniae, particularly in intensive care units (ICUs).

Aims. To assess Klebsiella pneumoniae antimicrobial resistance over time and impact of different infection control interventions.

Methods. We conducted a retrospective observational study at the 1200 acute-care beds San Martino Policlinic Hospital, located in Genoa, North-West Italy. We analyzed data of all patients with an hospital acquired bloodstream infection (HA-BSI) caused by Klebsiella pneumoniae from January 2008 to December 2017.



Results. During the study period 909 HA-BSIs were reported, 576 caused by carbapenem resistant Klebsiella pneumoniae (CR-Kp) and 333 by non-carbapenem resistant Klebsiella pneumoniae (nCR-Kp). Trends of CR-Kp and nCR-Kp incidence rates were different: while CR-Kp HA-BSIs increased from 0.00 cases per 10,000 patients-days in 2008 to 2.12 in 2015 and then decreased up to 0.89 in 2017, nCR-Kp incidence remained stable from 0.62 in 2008 to 0.78 in 2014, with a little increase in the last 3 years (1.17 in 2017). Incidence trends were also different considering total hospital and ICUs: the incidence peak of HA-BSIs caused by CR-Kp in the entire hospital was registered in 2015, while for ICUs the highest value was observed in 2010 (25.47/10,000 patients-days), with a marked decrease in the last years (7.53 in 2017).

Conclusions. Intensified infection control measures, in particular routine rectal surveillance cultures (from 2012), mandatory CR-Kp HA-BSIs notification (from 2013) and a program of antimicrobial stewardship (from 2014), resulted effective in reducing the circulation of CR-Kp, especially in ICUs.