

The Outbreak of Multidrug-Resistant *Klebsiella pneumoniae* in a High Volume Pancreatic Surgery Unit

Giuseppe Malleo, Silvia Geremia, Giovanni Marchegiani, Eleonora Morelli, Laura Maggino, Roberto Salvia, Claudio Bassi, Giovanni Butturini

Unit of Pancreatic Surgery, The Pancreas Institute, University of Verona Hospital Trust. Verona, Italy

Context The threat of infections due to multidrug-resistant (MDR) gram-negative rods is increasing. In 2012, an outbreak of *Klebsiella pneumoniae* resistant to multiple antibiotics occurred in different units of the Verona Hospital Trust, including our pancreatic surgery unit. **Objective.** The aim of this study was to investigate the burden of the hospital outbreak on mortality after pancreatic resections performed in 2012. Furthermore, we assessed whether the mortality pattern changed in comparison with 2011. **Methods** During internal audits, an analysis of short-term outcomes of pancreatic resections performed over a 2-year period was undertaken. **Results** In 2012, 261 pancreatic resections (160 pancreaticoduodenectomies, 60 distal resections, 15 middle pancreatectomies, 16 total pancreatectomies, 10 enucleations) were carried out. Postoperative morbidity was 54.9%; abdominal complications rate was 46.3%; postoperative mortality was 2.3% (6 events). MDR *Klebsiella pneumoniae* was isolated in 11 patients (4.2%). Of these, 5 died postoperatively of sepsis, superimposed to a grade C

pancreatic fistula after pancreaticoduodenectomy. The remaining postoperative death was due to a cardiac event. In 2011, 257 pancreatic resections were performed. No MDR *Klebsiella pneumoniae* was isolated. Postoperative morbidity was 51.0%, Abdominal complications rate was 43.7%, Postoperative mortality was 1.1% (3 cardiac events). The difference in mortality between 2012 and 2011 was not statistically significant (P=0.257). **Conclusion** Despite the difference in mortality between 2012 and 2011 was not statistically significant, the clinical impact of MDR *Klebsiella pneumoniae* on mortality after pancreatic resections was substantial. In particular, 5/11 of patients with MDR *Klebsiella pneumoniae* exhibited a very serious complication profile and eventually died of sepsis. In those who survived, hospital stay was prolonged, with increased cost. These results emphasize the need of appropriate measures to contain hospital outbreaks of MDR gram-negative strains, and of exhaustive patient information about nosocomial infections.