

eP043

ePoster Viewing

Post-surgical and implant infections: from head to knee

SIGNIFICANT DECREASE OF *S. AUREUS* MEDIASTITIS POST CARDIAC SURGERY AS A RESULT OF MOLECULAR NASAL CARRIER SCREENING AND DECONTAMINATION.

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Objectives Mediastinitis is the main infectious complication of cardiac surgery. *Staphylococcus aureus* is the most frequent agent involved in these surgical site infections. In 2012, we have implemented a simple and rapid *S. aureus* PCR screening with GeneXpert system (Cepheid®) and we developed a protocol for decontamination of positive patients in cardiac surgery unit of Poitiers University Hospital, France. In order to assess the impact of this protocol we compared mediastinitis incidence before and after intervention.

Methods This repeated cross-sectional before and after study compare *S. aureus* mediastinitis incidence post cardiac surgery during two periods of 18 months with and without protocol of nasal screening and decontamination.

For the first period conventional precautions were prescribed (one antiseptic shower the day before and the day of surgery). Over the second period a nasal swab was collected during preoperative consultation for elective surgery and the day of admission for urgent surgery. Decontamination protocol was initiated at home 3 days prior to elective surgery or as soon as possible on admission (3 intranasal applications of mupirocin and one antiseptic shower per day). Mupirocin treatment was continued in intensive care unit for 2 days post surgery. Patients with deep sternal wound within 3 months post operation requiring further surgery and at least 6 weeks of antibiotic treatment were defined as mediastinitis cases.

Results Six-hundred-seventy-nine patients were included in the first period from December 2010 to May 2012 (79% male and 21 % female, mean age 67.5 years). They were admitted for 337 coronary artery bypass graft, 232 valve surgery, 91 combined surgery and 19 others. Seven-hundred and two patients were included in the second period from June 2012 to November 2013 (76% male and 24% female, mean age 69.6 years). They were admitted for 348 coronary artery bypass graft, 212 valve surgery, 111 combined and 32 others. No significant difference was found between these two populations.

Over the second period, 82% (576/702) of operated patients were tested and 25% (144/576) were *S. aureus* carriers with 134 MSSA (24%) and 10 MRSA(1%). *S. aureus* mediastinitis rate was significantly decreased from 1.5% (10/679) during the first period to 0.3% (2/702) during the second period ($p=0.02$).

Conclusions Despite an incomplete screening (82% of operated patients) due to operations carried out in extreme emergency, the introduction of rapid screening for nasal carriage of *S. aureus* by PCR using the GeneXpert combined with per-operative decontamination significantly reduce the risk of post sternotomy mediastinitis. Further economic assessment would be useful to support implementation of this new protocol.