Decolonisation of MRSA and its effect on surgical site infections--a study in a tertiary care institute

Abstract

Background: Two-thirds of surgical site infections (SSI) because of Staphylococcus aureus are caused by Methicillin resistant Staphylococcus aureus (MRSA). This study was done to assess the efficacy of topical 2% mupirocin with 2% chlorhexidine gluconate body wash in decolonizing MRSA and its impact in preventing SSI because of MRSA. The various risk factors associated with MRSA carriers and SSI were also studied because of paucity of data in the developing world.

Methods: We did a non-randomised interventional trial in 602 patients undergoing elective general surgical operations. All patients in case (297) group were screened for MRSA and those positive were decolonised with topical 2% mupirocin calcium ointment and daily baths with 2% chlorhexidine antiseptic solution for 5 days. Control (305) group patients underwent surgery without decolonisation. Postoperatively, all patients were followed up for SSI for 30 days.

Results: Prevalence of MRSA carriers was 7.5% with decolonisation rate of 95.2%. The SSI incidence was 21.3%. The significant risk factors for SSI were type of anaesthesia ($p = 0.002$), duration of surgery ($p = 0.001$) and preoperative hospital stay ($p = 0.001$). There was a significant association between MRSA carrier positivity at the time of surgery and SSI ($p = 0.041$).

Conclusions: There was no reduction in rate of SSI or other nosocomial infections in patients undergoing elective general surgical operations following preoperative MRSA decolonisation with 2% mupirocin and 2% chlorhexidine gluconate in MRSA carriers. MRSA carrier status was a significant risk factor for SSI but not for other nosocomial infections.