

Summary

Objective: To evaluate whether intraoperative subcutaneous wound irrigation with 0.04% polyhexanide can reduce surgical site infection (SSI) in elective laparotomies compared to saline.

Summary Background Data: SSI is a common complication after gastrointestinal surgery. To date, there is a lack of evidence whether subcutaneous wound irrigation is beneficial in terms of reduction of SSI.

Methods: The RECIPE trial was an investigator initiated single center, single blind prospective, randomized controlled trial with two parallel treatment groups, comparing wound irrigation with 0.9% saline to antiseptic 0.04% polyhexanide solution in elective laparotomies. Primary endpoint was the rate of SSI within 30 days postoperatively according to Center for Disease Control (CDC) criteria.

Results: Between Feb 02, 2015, and May 23, 2018, 456 patients were randomly assigned to saline (n=228) or polyhexanide (n=228). Final cohort for analysis comprised 393 patients (202 in the saline and 191 in the polyhexanide group). Overall rate of SSI was 28.2%, n=111. Simple analysis with cross tabulation revealed that significantly fewer SSIs occurred in the polyhexanide group: n=70 (34.7%) vs. n=41 (21.5%); p=0.004. In a multiple logistic regression model the factor wound irrigation with polyhexanide (OR 0.44; 95% CI 0.27 – 0.72; p=0.001) was most strongly associated with risk reduction of SSI. Preoperative anaemia (OR 2.08; 95% CI 1.27 – 3.40; p=0.004) and more than five prior abdominal operations compared to none (OR 8.51; 95% CI 2.57 – 28.21; p<0.001) were associated with SSI.

Conclusions: Intraoperative subcutaneous wound irrigation with antiseptic 0.04% polyhexanide solution is effective in reducing SSI after elective laparotomies.