

## EP.FRI.16

**Use of Pulsed Lavage Reduces the Rate of Surgical Site Infection After Laparotomy**

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**Aims:** Surgical site infections (SSIs) are a preventable and common post-operative complication within general surgery. Intra-operative irrigation of surgical incisions is an inexpensive method to reduce post-operative SSI rates, however its use is currently limited to orthopaedic surgery. We aimed to assess the effects of pulsed lavage (PL) irrigation on SSI rates following elective and emergency laparotomies.

**Methods:** Elective and emergency patients who underwent a laparotomy between 2018 and 2019 were included. Relevant demographic and peri-operative risk factors collected retrospectively, following STROBE criteria. The primary outcome was rate of superficial SSIs within 30 days of the operation. Independent risk factors were assessed via multivariate logistic regression analysis.

**Results:** 176 patients were identified, with an average age of  $60.7 \pm 19.1$  years. 82.4% (145/176) were emergencies and the mean ASA grade was 2.8. Fifty two patients (29.5%) had PL used during their operation. Thirty seven patients (29.8%, 37/124) in the control group developed a SSI, compared to seven patients (13.5%, 7/52) in the PL group ( $p = 0.022$ ). At multi-variate analysis, the use PL conferring an Odds Ratio 0.36 (CI 0.12-0.94,  $p = 0.047$ ) for developing a SSI.

**Conclusions:** PL appears to significantly reduced the rate of SSI following laparotomy. There remains scope to reduce the incidence of this common and expensive post-operative complication, and PL could provide a potential cost-effective means to deliver improved outcomes. Future prospective randomised trials are essential to fully assess its benefits and wider use within general surgery.