TP9.2.21
Laparoscopy in Emergency General Surgery (The LEGS Study): NELA Database Analysis -Comparison of Outcomes in Laparoscopic versus Open Surgery

Kat Parmar[1,2], Ellena Badrick[1], Lee Malcomson[1], Andrew Renehan[1,3], Abhi Sharma[4], Nick Heywood[5]
[1]*Manchester Cancer Research Centre, University of Manchester,* [2]*General Surgery Training Programme, Health Education North West England,* [3]*The Christie NHS Foundation Trust,* [4]*Manchester University NHS Foundation Trust,* [5]*East Lancashire Hospitals Trust*

Introduction: Guidelines suggest the laparoscopic approach may be safe and feasible in emergency general surgery. Despite this, the UK National Emergency Laparotomy Audit (NELA) rate of laparoscopic surgery remains low. Our earlier analysis of the NELA database identified factors associated with use of laparoscopy, then recommended further analysis to compare outcomes between laparoscopic and open surgery.
Methods: We obtained information from the NELA database (2013 - 2017) and performed logistic regression on all first operations during the hospital admission. Outcomes were compared between open and laparoscopic approach (fully laparoscopic, laparoscopic assisted and laparoscopic converted). The primary outcome was death during hospital admission; secondary outcomes were admission to intensive care unit (ICU), length of ICU stay and return to theatre.
Results: The cohort comprised 68,928 open (52% men, mean age 65) and 12,144 laparoscopic (51% men, mean age 58). In a model adjusted for all factors influencing primary or secondary outcomes (age, gender, p-possum, weekday versus weekend, operative time of day, malignancy, peritoneal soiling, CEPOD urgency, surgical grade and anaesthetist grade), death rates were significantly lower in the laparoscopic group (OR 0.65, 95% CI 0.59 – 0.71). Post-operative admission to ICU and ICU stay $>$ 3 days were both significantly lower in the laparoscopic group (OR 0.59, 95% CI 0.56 – 0.62; OR 0.82, CI 0.75 – 0.89). There was no difference in return to theatre.
Conclusions: Outcomes for laparoscopy in emergency general surgery appear superior to open surgery, although there may be residual unmeasured confounding factors. Further analysis will compare outcomes between pathologies.