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Variation in anti-microbial use and complications post emergency appendectomy in Australia: Do we follow recommended guidelines?

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Aim: The primary aim is to investigate surgeons' compliance to antibiotics guidelines for management of appendicitis in Australia peri and postoperatively, with the secondary aim is looking at predictors of post-operative complication; Surgical Site Infection (SSI) and intra-abdominal abscess in 30 days.

Method: It is a multicenter, prospective, observational study conducted in a period of 2 months between June and October 2016. A database with prefilled variables is completed by each local principal investigator with protocol guidance. Patients who underwent laparoscopy with the intention of appendectomy were recruited in the study.

Result: A total of 1,189 patients were recruited. Therapeutic guidelines antibiotic version 15 (Australian Clinical Practice Guidelines, 2014) is used to compare compliance. Guidelines endorses all patients receive antibiotics peri-operatively; 1081 (92.1%) received antibiotics in this study. The rate of peri-operative antibiotic use increases with the severity of appendicitis. Highest use was in the gangrenous group, 81 (98.1%) followed by complicated, 191 (93.2%) and non-appendicitis, 156 (85.7%) 593 (51.0%) and 379 (32.6%) patients received post-operative Intravenous (IV) and oral antibiotics respectively. Following simple appendectomy, only 391 (56.6%) patients did not receive post-operative antibiotics as per guidelines. However, in gangrenous and complicated appendicitis, it is reassuring to see 89 (98.9%) and 198 (97.1%) patients received antibiotics post-operatively. Aboriginal and Torres-Strait-Islander (5.5 x) and laparoscopy converted open appendectomy (9.5 x) increases the odds of SSI. This is also statistically significant post multivariable logistic analysis ($p < 0.05$). Complicated appendicitis operated by senior surgeon and received IV or oral antibiotics post-operatively increases the odds of intra-abdominal abscess.

Conclusion: We recommend more awareness and implementation are required for antibiotics prescription guidelines for optimal management of appendicitis in Australia.

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