

O1133 **Carriage of extended spectrum beta lactamase producing Enterobacteriaceae (ESBL-PE) and the risk of surgical site infection (SSI) after colorectal surgery: a prospective cohort study**

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Background: Perioperative antibiotic prophylaxis covering pathogens colonizing the gastrointestinal tract is an essential measure in preventing SSI after colorectal surgery. The prevalence of ESBL-PE has risen in hospital- and community-acquired infections and in healthy individuals. Prophylactic regimens currently used to prevent SSI following colorectal surgery do not routinely cover ESBL-PE. We aimed to determine whether the risk of SSI following colorectal surgery is higher in ESBL-PE carriers than in non-carriers.

Materials/methods: We conducted a prospective cohort study of patients undergoing elective colorectal surgery in three hospitals in Israel, Switzerland, and Serbia between 2012-2017. Patients were included if they were 18 and older, screened for ESBL-PE carriage before surgery, received routine prophylaxis with a cephalosporin plus metronidazole, and did not have an infection at the time of surgery. The exposed group consisted of all ESBL-PE positive patients. The unexposed group consisted of a random sample of ESBL-PE negative patients. Patient and surgery characteristics were collected. We fit a logistic mixed effects model with study site as a random effect.

Results: A total of 3626 patients were screened for ESBL-PE carriage prior to colorectal surgery. The prevalence of ESBL-PE carriage was 15.3% (range by center, 12-20%). The study sample included 222 ESBL-PE carriers and 440 non-carriers. In 76% the indication for surgery was colon cancer. All patients had a National Nosocomial Infection Surveillance (NNIS) System Risk Index score ≤ 2 . SSI

occurred in 51 ESBL-PE carriers (23.0%) and 46 non-carriers (10.5%) ($P<0.001$). In multivariable analysis, ESBL-PE carriage more than doubled the risk of SSI (OR= 2.25, 95% CI = 1.41-3.59). SSI was microbiologically confirmed to be caused by ESBL-PE in 7.2% of carriers and 1.6% of non-carriers ($P<0.002$).

Conclusions ESBL-PE carriers who receive cephalosporin-based prophylaxis are at increased risk of SSI following colorectal surgery.