Perioperative hyperglycemia in non-diabetic patients undergoing elective colorectal resections associated with increased organ/space SSI rates.

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Background. The incremental impact of perioperative stress-induced hyperglycemia on the clinical outcomes is becoming increasingly recognized but rarely discussed in enhanced recovery protocols. The aim of this study was to evaluate the rates of stress hyperglycemia and its impact upon postoperative adverse event rates while implementing a surgical site infection (SSI) bundle.

Methods. This was a retrospective cohort study of patients who underwent elective colorectal resection in a single institution. SSI bundle included ten evidence-based interventions at all management stages: pre-hospital, pre-, intra-, and postoperative. The preoperative 8-hour nil per os strategy as well as hyperglycemia management were not changed. Hyperglycemia was defined as blood glucose >140 mg/dL. The primary endpoint was SSI as defined by the Centers for Disease Control National Nosocomial Infections Surveillance. T-test was utilized to compare continuous variables and Chi-squared test for categorical variables.

Results. There were overall 311 patients: 54 (17.4%) with preexisting diabetes mellitus and 257 non-diabetic. 145 (56.2%) non-diabetic patients developed perioperative

hyperglycemia. Hyperglycemic patients were comparable to their normoglycemic counterparts in terms of age (p=0.07), gender (p=0.64), BMI (p=0.32), and ASA score (p=0.83). 14/145 (9%) hyperglycemic and 9/112 (8%) normoglycemic patients developed superficial incisional SSI (p=0.71). 3/145 (2%) hyperglycemic and 4/112 (3.6%) normoglycemic patients developed deep incisional SSI (p=0.23). The organ/space SSI rate was significantly higher in hyperglycemic patients (17/145 vs. 3/112; p=0.04).

Conclusion. This study found that despite the implementation of an SSI bundle, 56% of non-diabetic patients developed perioperative hyperglycemia, which was associated with significantly increased organ/space SSI rates.