



Western Surgical Association 2020 Annual Meeting

Monday, November 9, 2020
4:00pm – 6:15pm Pacific Time
– Virtual Meeting --

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7. EVALUATING THE VARIATION IN PERIOPERATIVE OPTIMIZATION FOR COLORECTAL SURGERY: A REPORT FROM THE SURGICAL CARE OUTCOMES ASSESSMENT PROGRAM

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Background: Robust data including meta-analyses of randomized control trials demonstrate that enhanced recovery protocols (ERPs) decrease length of stay, complications, and cost. However, little is known about reasons for variation in compliance with ERPs including the patient-, surgeon-, and hospital- factors driving delivery of ERP components. Our purpose was to confirm the efficacy of ERPs in a broadly generalizable regional network, and to determine factors that are associated with ERP delivery in diverse hospital settings.

Methods: A cohort of patients was created by prospectively recording all elective colorectal operations at hospitals in the Surgical Care Outcomes Assessment Program (SCOAP). Delivery of 12 ERP components is tracked at all SCOAP sites, spanning the entire perioperative care experience. These include preoperative components (receipt of oral antibiotics with bowel prep, carbohydrate loading, immunonutrition, three types of non-narcotic preoperative analgesia and regional anesthesia) and postoperative components (three types of non-narcotic postoperative analgesia, nasogastric tube removal in the operating room, and early diet advancement). Composite of total components delivered was described at all sites, and factors associated with differences in ERP component delivery and impact on outcomes were reported. We designated “3+ components not available” as a variable of interest to track quality of missing data. In addition, hospitals participating in SCOAP received continuous feedback on their performance, and trends in ERP component delivery were reported over time.

Results: From 2016 to 2019, 9,274 elective colorectal operations (mean age 61 years, 55% female) were performed at 36 hospitals. Indications were 48% (n=4404) cancer, 23% (n=2169) diverticulitis, and 8% (n=737) inflammatory bowel disease. Minimally invasive surgery was used in 71% (laparoscopy in 52% and robotics in 19%). While every component is not indicated in every case, the proportion of cases with 6 or more components received increased from 23% in 2016 to 50% in 2019 (p<0.001). Rates of poor adherence (3+ components missing) were more frequent in open surgery vs MIS (49% vs 34%, p<0.001), cases done in the abdomen vs pelvis (43% vs 33%, p<0.001), and at hospitals performing fewer than 100 colectomies per year (53% vs 34% at hospitals with 100+ cases/year, p<0.001). After risk adjustment, an incremental increase in



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delivered components was associated with a lower likelihood of prolonged length of stay (OR 0.91, 95%CI 0.85-0.97, $p=0.006$), combined adverse events (OR 0.84, 95%CI 0.77-0.94, $p=0.001$) and re-interventions (OR 0.85, 95%CI 0.77-0.94, $p=0.001$).

Conclusion: At SCOAP hospitals, delivery of increasing numbers of ERP components was associated with improved perioperative outcomes and decreased complications after elective colorectal surgery, confirming efficacy across our network. The variation in delivery of these evidence-based components in particular subsets of our cohort indicates an important opportunity for quality improvement initiatives within this network.