

Evaluating financial and clinical outcomes of Enhanced Recovery After Surgery (ERAS) for colorectal surgery in the community hospital setting

Abdel-Moneim Mohamed Ali MBBS, Whitney Davidson MD, Justin Turcotte MBA, Jared Calish PharmD, Glen Gibson MD, Naeem Newman MD.



Background

- Enhanced Recovery after Surgery (ERAS) protocol was developed in 2001 by a group of academic surgeons in Europe.
- ERAS has been adopted by various specialties including colorectal surgery to expedite post-operative recovery and return to normal activities after surgery.
- The clinical and financial impacts of the protocol has been mostly studied in academic centers.
- ERAS is more cost-effective treatment pathway compared to the previous standard of care.

Objective

- To evaluated the ERAS protocol in the community hospital setting.
- To compared the financial, clinical outcomes and opioids usage among patients undergoing colorectal resection before (pre-ERAS) and after (post-ERAS) implementation of the ERAS pathway.

Methods

- Study included 511 Patients (pre-ERAS=176 , post-ERAS=335) underwent colorectal resection over the period from January 2015 to March 2017.
- Patient under ERAS protocol were compared to a historical control cohort.
- Patients were excluded if they had emergency colon resection, or if they have had a concomitant gynecologic or urologic procedure.
- Statistical tests used included Fisher’s exact test, Chi-Square test, Student’s T test, ANOVA and Mann-Whitney U test.

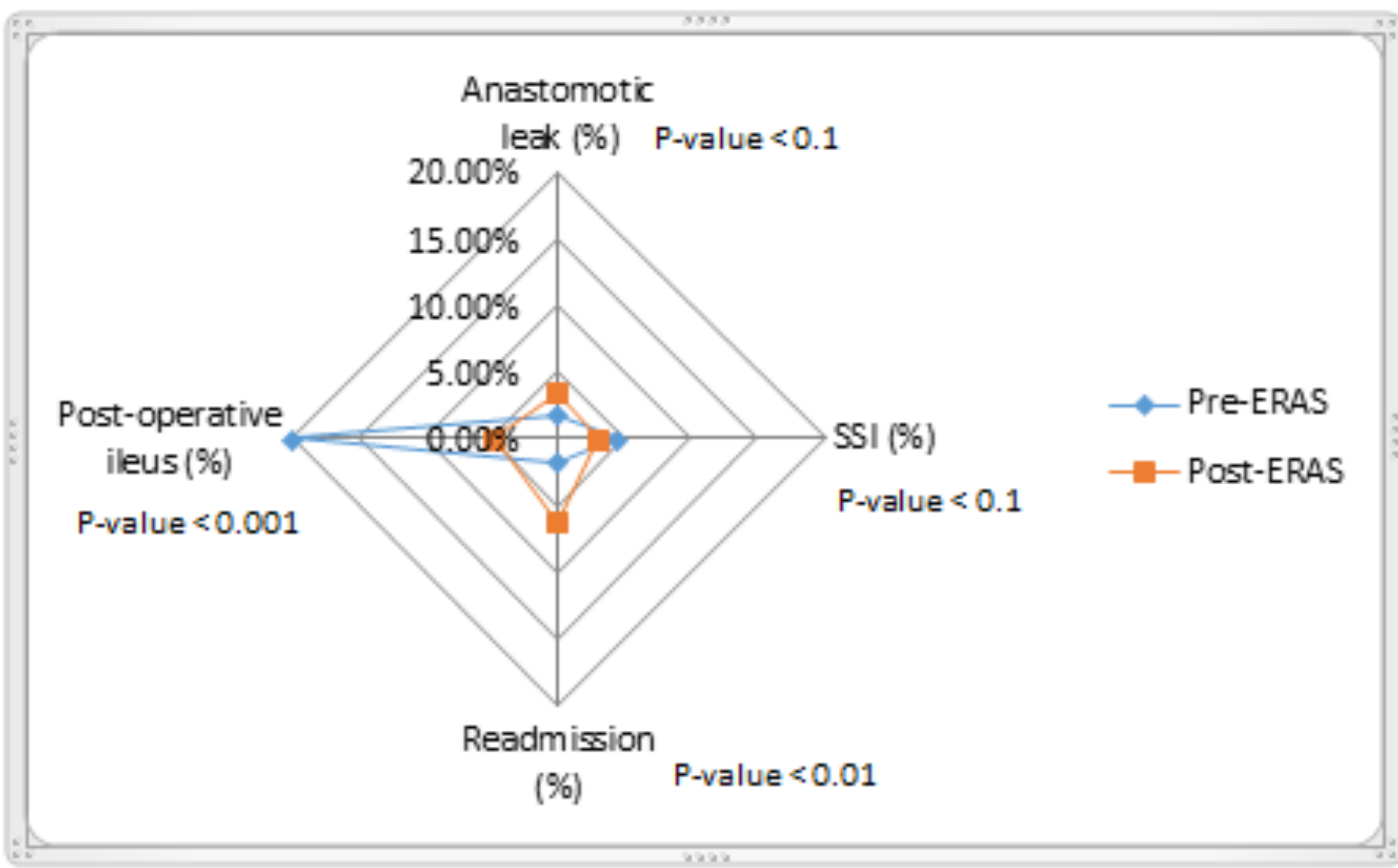
Our ERAS protocol included:

- Preoperative nutritional support for malnourished patients,
- Pre-, intra- and postoperative multimodal pain control.
- Judicious fluid utilization.
- Early initiation of entral feeding after surgery.
- Utilization of nurse navigator for patient education.

Results

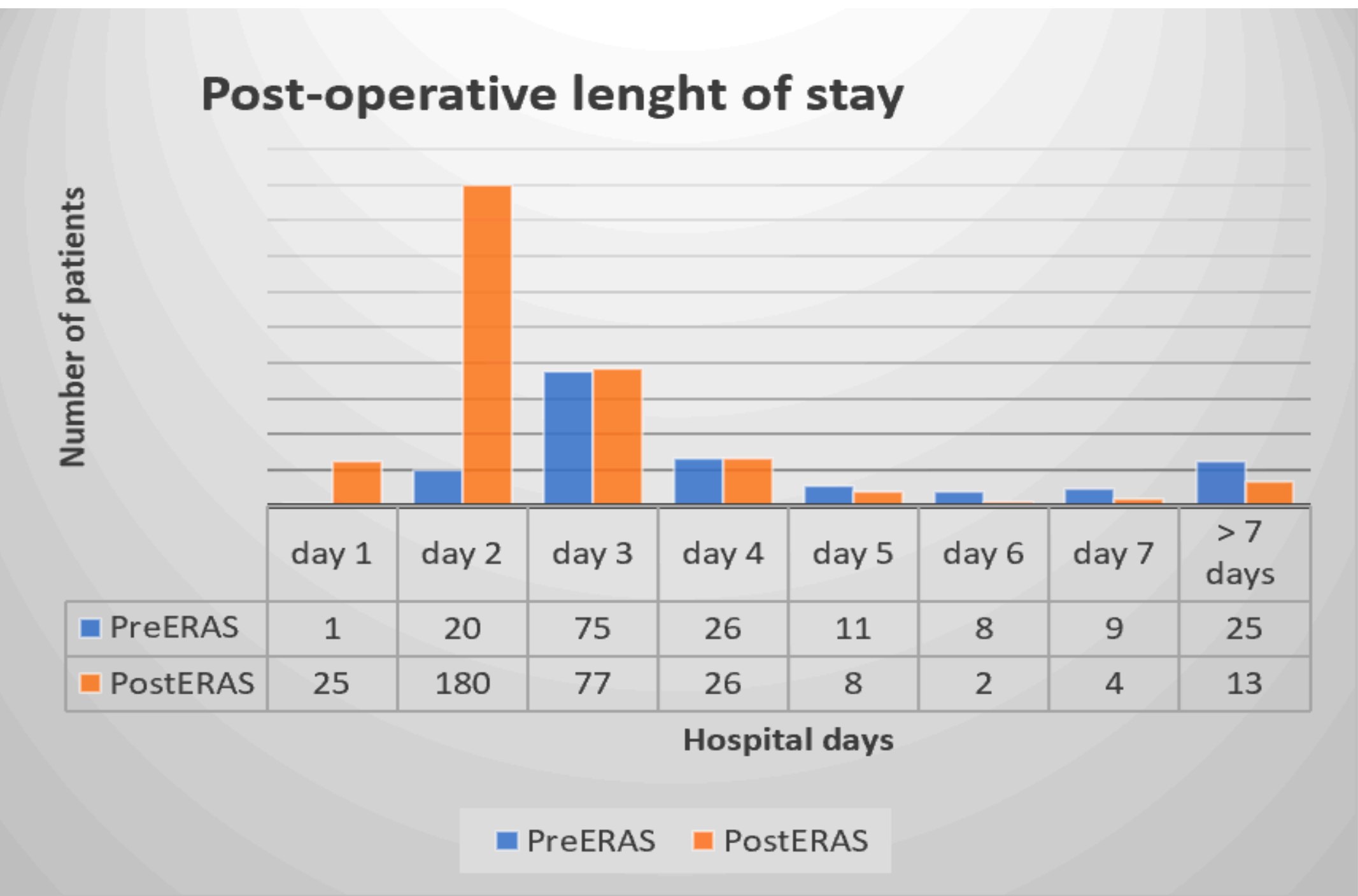
- Analysis showed statistically significant reduction in the following parameters in the post-ERAS group compared to pre-ERAS group: Post-operative ileus (4.77% vs. 19.88%, $p < 0.001$), inpatient length of stay (mean of days) (2.9 vs. 4.6, $p < 0.001$), intraoperative IV fluids (mean volume in ml) (1771 vs. 2579, $p < 0.001$), 24 hour patient controlled analgesia PCA usage (MME received) (10.44 vs. 35.55, $p < 0.001$).
- No statistical significance was achieved between the two groups for: time in PACU, anastomotic leak rate, and surgical site infection and charge per case (18,831\$ vs 20,122 \$) but net savings after implementing ERAS was \$343,406.

Figure 1: Clinical outcomes of the Pre-ERAS and Post-ERAS groups :



SSI-surgical site infection, Mann-Whitney U test

Figure2: Postoperative length of stay for both Pre-ERAS and Post-ERAS implementation groups:



Conclusions

- Implementation of ERAS pathway in a teaching community setting has shown both clinical benefits in reduction of ileus rates, PCA utilization as well as significant reduction in cost per surgical case.

References

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