Implementation of the ERAS Perioperative Consensus Protocol in lumbar fusion surgery at a single Canadian institution in Calgary, Alberta: early results of a 200-patient cohort.

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Objectives

Implementation of ERAS Society protocols has been shown to improve patient outcomes after surgery. The ERAS Society protocol for lumbar fusion was published in 2021. The purpose of this study was to describe the early results of implementing the ERAS Society protocol on lumbar fusion surgery at a quaternary hospital in Calgary, Alberta, Canada.

Method

The comprehensive ERAS protocol was implemented at the Foothills Medical Centre, Calgary, Alberta on July 1, 2023, with patients receiving standardized ERAS pre-operative and postoperative order sets. We randomly selected and compared 100 pre- and post-ERAS implementation patients. Automatic data extraction for patient demographics along with manual data extraction from our electronic medical record, Epic, was used. Staged and targeted quality improvement initiatives of high value ERAS recommendations were performed post-implementation. Univariable analyses was performed to assess impact of protocol implementation on each ERAS compliance measures and postoperative outcomes.

Results

Mean age in the pre-implementation group was 57.4 and 60.1 in the post implementation. The most common primary complaint was lumbar radiculopathy in both groups. Five compliance measure were significantly improved post-implementation (preoperative education, preoperative nutritional screening, pre-emptive analgesia, foley discontinued by POD 0, and any mobilization on POD 0, all $p<0.05$). The percentage of patients achieving ≥75% compliance rate for all measures improved from 7% to 38.5% ($p<0.001$). Reoperation rates at 30-days was 9.9% vs. 0% in the pre- and post-implementation cohort, respectively ($p=0.06$). Rates of severe complications were 10% in the pre-implementation group and 2.3% in the post-implementation cohort ($p=0.1$). No significant difference was observed in the length of hospital stay.

Conclusions

Implementation of an ERAS protocol for lumbar fusion surgery in Calgary has resulted in improved compliance in several ERAS elements. We observed trends towards reduction in severe complications and reoperations rates in the post-implementation cohort. A larger patient sample and ongoing quality improvement initiatives may result in improvements in other outcome measures and confirm the trends currently seen.