



ARTICLE OF THE MONTH

Khalil, et al. Evaluation of the enhanced recovery after surgery protocol in living liver donors. *Clinical Transplantation*. 2018;32e13342
<https://www.ncbi.nlm.nih.gov/pubmed/29963721>

Abstract:

Background: Enhanced recovery after surgery (ERAS) protocol has proven to be effective in many surgery fields in controlling pain and promoting early recovery. Application of the (ERAS) protocol in living donor liver patients is a new step to promote early recovery.

Methods: We analyzed outcomes in two groups. Group A included the living donors who had the ERAS protocol applied (n = 30), and Group B included donors who had their surgery before the ERAS protocol (n = 30). All donors had the same incision. The ERAS protocol involved a multimodality methods. This included intravenous ketamine and lidocaine intraoperatively with single dose intrathecal morphine and local injection of long-acting bupivacaine. The postoperative regimen included intravenous ketamine, lidocaine, ketorolac, and narcotics as PRN.

Results: Pain on the first three postoperative days was significantly lower in Group A ($P < 0.05$). Narcotics were also significantly lower in Group A ($P < 0.01$). Return of bowel function occurred earlier by 1 day in Group A ($P < 0.003$). Group A patients could tolerate a regular diet by postoperative day (POD) three vs four in Group B patients ($P = 0.0057$). Mean length of stay was lower in Group A, but not statistically significant.

Conclusions: Enhanced recovery after surgery protocol was effective in minimizing postoperative pain and helped to decrease the postoperative narcotics and helped early recovery.”

COMMENTS MADE BY SCHLICHTING, NICOLETTE MD

Summary:

This article, from the August 2018 issue of *Clinical Transplantation*, was chosen along with two supporting articles both from *Liver Transplantation* to highlight the topics of ERAS (Enhanced Recovery After Surgery) in living liver donors and pain management for this patient population. Butt et al (1) collected data on pain and other physical symptoms in a cohort of living liver donors and found that 21% of donors endorsed clinically significant pain during follow up,

suggesting that there is room for improvement with our management strategies.

Our main article describes a retrospective study done by Khalil et al in which an ERAS protocol was implemented for living liver donors. Enhanced recovery pathways are being successfully utilized for many different groups of surgical patients. The authors emphasize that living liver donors are healthy people who chose to endure a surgical procedure in order to benefit another individual, therefore making it critical that everything be done to better the recovery process. They demonstrate that use of an ERAS protocol with a multimodal opioid-sparing analgesic regimen can improve pain control while decreasing adverse events. Regional analgesia is a critical part of ERAS. In this study, they opted to give intrathecal morphine to avoid the side effects of epidural analgesia. Anesthesiologists are often hesitant to use epidural catheters in this group of patients because of postoperative coagulopathy and risk of epidural hematoma. Koul et al (2) performed a retrospective study to investigate the safety of thoracic epidural analgesia (TEA) in the setting of right lobe donor hepatectomy. They noted that all patients had temporary changes in their coagulation profiles, all of which normalized by postoperative day 5. The catheters were removed only after INR and platelet counts returned to normal, with most removals occurring on postoperative days 3 through 5. The most commonly encountered adverse effects were nausea and vomiting, which were easily treated. There were no epidural hematomas.

Taken together, these three articles demonstrate the importance of improving the recovery period for our living liver donors. ERAS protocols play a critical role in facilitating this process by providing better pain control, decreasing adverse effects, and promoting early mobilization and return of gastrointestinal function. Epidural analgesia may be safe to incorporate into the ERAS protocols.

References:

1. Butt, et al. Fatigue, Pain, and Other Physical Symptoms of Living Liver Donors in the Adult-to-Adult Living Donor Liver Transplantation Cohort Study. *Liver Transplantation*. 2018; 24(9): 1221-1232 <https://www.ncbi.nlm.nih.gov/pubmed/29698577>
2. Koul, et al. Thoracic Epidural Analgesia in Donor Hepatectomy: An Analysis. *Liver Transplantation*. 2018; 24 (2): 214-221 <https://www.ncbi.nlm.nih.gov/pubmed/29205784>

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