

## Enhanced Recovery after Surgery (Eras) in Liver Resections

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The improvement in the results of hepatectomies in recent years has allowed a greater number of patients to access this surgery as part of the treatment of benign and malignant tumors. Liver resections require specialized management and are procedures that may have high morbidity and mortality.

In the last years a number of strategies have been implemented, mainly in the treatment of metastases of colorectal origin in order to achieve greater survival. Examples of such strategies are simultaneous resections, re-hepatectomies, two stage procedures and ALLPS among others.

Recently, the implementation of ERAS programs, mainly in colonic surgery has gained a place in major abdominal surgery. Henri Kehlet, from Copenhagen, was the first to implement this type of program in colonic surgery obtaining excellent results in terms of hospital stay and a decrease in costs. Different centers applied accelerated recovery programs to surgeries of different organs replicating the results obtained in colonic surgery. In 2016 a group of surgeons experts in liver surgery evaluated the application of ERAS programs in liver surgery and contemplate 23 points tending to obtain a rapid recovery in patients undergoing hepatectomies evaluating the level of evidence and recommendation [1].

These 23 points correspond to pre, intra and postoperative time, some of them are preoperative counseling, carbohydrate intake up to two hours prior to surgery, use of intrathecal morphine or epidural catheter, hydration management during Surgery, avoiding the use of drainage, bladder catheter and nasogastric intubation, early onset of ingestion and ambulation, etc. These peri-operative measures aim to minimize 4 variables that favor inflammation and a decrease immunity. (1 - the stress of laparotomy, 2 - the use of intravenous opioids, 3-Blood loss and transfusions and 4- peri-operative feeding).

Until the end of 2016 there were few published papers on the application of ERAS programs in liver surgery, most of the protocols differed at some points but were coincident in most of the main results. In all, there was a significant decrease in hospital stay and therefore costs. The literature is contradictory in that the percentage of complications is lower than with the usual management and finally that patients admitted to ERAS programs have a higher but not significant percentage of readmissions compared to those that were managed in a conventional manner.

In a study conducted by our team within an ERAS program for open minor hepatectomies due to metastases with and without simultaneous colon resections compared to our historical series of minor hepatectomies due to colorectal metastases, we corroborate as a main advantage a clear decrease in the hospital stay and therefore a decrease of the costs. There was no decrease in the percentage of complications [2].

Other points that are analyzed within the ERAS program are the adherence to the points of each protocol and the total recovery prior to discharge, being understood as full recovery fundamentally to control of pain, ambulation and adequate tolerance to feeding.

Perhaps the use of laparoscopic route can further improve the results of this type of program, mainly in terms of postoperative pain control at discharge.

Finally, the amount of data to advance in firmer conclusions is scarce and there is a significant absence in terms of standardization of programs, despite this, a significant decrease in hospital stay is certain. With the passage of time and greater experience, greater certainties will be obtained in this regard to recommend this kind of protocols.

### Bibliography

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