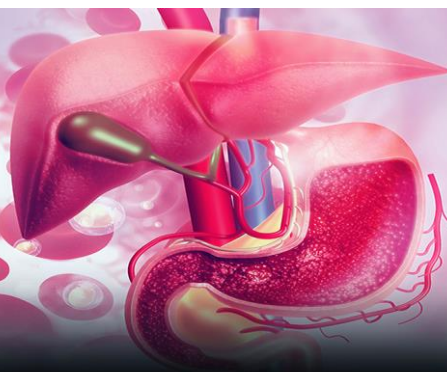


Enteron



Dear Doctor,

Greetings from Micro Labs limited.

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Looking forward to your valuable feedback

Best Regards,
Medical Team, Micro Labs Ltd

Predictors of Early Recurrence Post Liver Cancer Resection

An easy-to-use online calculator effectively predicted which patients were at increased risk for very early recurrence (VER) after intrahepatic cholangiocarcinoma (ICC) liver resection, new research has shown.

According to study authors led by Timothy Pawlik, MD, MPH, PhD, of Ohio State University in Columbus, VER projections may then be extended either pre-operatively to recommend an alternate care plan or post-operatively to notify surveillance techniques.

In a sample of 880 patients, 22.3 percent had VER, identified as recurrence within 6 months of resection, Pawlik and colleagues recorded 13.8 months of total survival (interquartile range 11.6-15.3 months) in JAMA Surgery Median overall survival (OS) for patients with VER when just 8.9 percent of the same group remained alive at 5 years, researchers noted.

This compares to a mean OS of 59.7 months for patients without VER while 49.8 percent of non-VER patients were still alive at 5 years ($P < 0.001$), study participants added. Using their preoperative model, patients may be categorized as medium, moderate and high risk for VER, with increasingly bad 6-month survival levels without recurrence of 87.7% for low-risk patients, 72.3% for intermediate-risk patients, and 49.5% for high-risk patients ($P < 0.001$).

Likewise, the postoperative analysis estimated that at 6 months, 90% of low-risk patients, 73.1% of intermediate-risk patients, and 48.5% of high-risk patients will remain alive and safe from recurrence ($P < 0.001$). Using an online calculator built in this report, doctors will quantify patients' individualized probability of developing VER in the pre- and post-operative setting

In an email to MedPage Today, Mark Yarchoan, MD, of Johns Hopkins Hospital in Baltimore, Maryland, commented that the features identified by this work will help us identify patients who may be most at risk for recurrence following surgery.



Throughout the research, patients who endured liver resection for bile duct cancer from 1990 to 2016 were described utilizing a worldwide multi-institutional database obtained from 15 large hepatobiliary institutions participating throughout the Worldwide Collaboration on Intrahepatic Cholangiocarcinoma.

In the sample, median age was 59 (IQR 51-68) and 50.2 percent are white, 44.3 percent Asian, and 3.2 percent Black. For a T1 or T2 tumor, the majority had a large hepatectomy while about one-third of the patients either provided adjuvant chemotherapy or radiotherapy.

On multivariable analysis of preoperative predictive factors, the following increased the odds of patients having very early recurrence:

- Person of color: OR 1.79 (95% CI 1.23-2.60)
- Liver cirrhosis: OR 2.06 (95% CI 1.25-3.40)
- Larger tumor size: OR 1.12 (95% CI 1.06-1.17)
- Higher number of tumors: OR 1.36 (95% CI 1.15-1.60)
- Suspicious or metastatic lymph nodes on preoperative imaging: OR 1.90 (95% CI 1.28-2.84)

By comparison, with increasing age, the chance of VER was marginally smaller. The predictive postoperative model used the same variables as the preoperative model but added additional pathological details including microvascular interference, nodal position, and margins of resection.

A separate multivariable analysis that included both pre-and postoperative factors demonstrated that the following features were associated with a higher risk of VER:

- Person of color: OR 2.04 (95% CI 1.38-3.00)
- Larger tumor size: OR 1.11 (95% CI 1.06-1.17)
- Higher number of tumors: OR 1.36 (95% CI 1.15-1.60)
- Microvascular invasion: OR 1.55 (95% CI 1.06-2.26)
- N1 or Nx disease: OR 1.94 (95% CI 1.29-2.94)
- R1 resection: OR 2.14 (95% CI 1.27-3.60)

Again, older age was associated with slightly reduced risk of VER.

In fact, Pawlik 's team provided two different data sets, one for testing and evaluation. For both data sets the pre-operative model's discriminative accuracy was very high.



Similarly, the postoperative model's predictive precision in both data sets has been quite strong, researchers reported. Furthermore, there was "strong alignment" between the predicted VER likelihood and the reported VER frequency for both pre- and post-operative models.

The authors then created a simple scoring system which helped to assess the prognosis of patients without using the online calculator. In this rating method, 90 percent of patients with a 0 to 3 preoperative score were 6 months clear of disease recurrence relative to 75.6 percent of those with a 4 to 5 preoperative score, and 55.2 percent of those with a 6 to 9 preoperative score ($P < 0.001$).

Depending on the postoperative ranking of the participants, 91.1 percent of those who ranked 0 to 4 were 6 months clear of disease recurrence, as were 82.4 percent of those who ranked 5 to 6 postoperatively. It was contrasted to just 57.7 percent of patients with a postoperative ranking of 7 to 10 ($P < 0.001$).

In both the training and validation data sets, the predictive performance of the pre- and postoperative models centered on the scoring method was again quite strong. Authors indicated that it is especially necessary to classify patients who are expected to develop a VER as such patients could be eligible for clinical studies, neoadjuvant therapy or other forms of non-surgical care.

Researchers suggested that characterizing patients at risk for VER in postoperative settings can also be helpful in assessing the severity of the monitoring technique, as well as in distinguishing patients that might gain further from adjuvant chemotherapy following ICC resection.



Analgesic effect of intraoperative Esmolol for Laparoscopic Gastroplasty

INTRODUCTION

Postoperative analgesia and recovery of patients undergoing bariatric surgery are challenging. Opioids are successful in alleviating postoperative pain but these drugs are associated with side effects particularly in morbidly obese people. Certain medications are also prescribed to improve the opioid analgesic benefit and to reduce the frequency and extent of side effects.

Such patients are also advised to take lower half-life medications. And the most effective solution for morbidly obese patients is multimodal analgesia of medications with various acts. A combination of short-acting drugs with an opioid reduction focus can reduce vomiting and pulmonary complications, allowing early ambulation and shortening the stay in hospital. Beta-adrenergic antagonists, such as esmolol, were used for multimodal postoperative analgesia in several trials. Several pathways have been suggested for the analgesic function of beta blockers such as: calcium and potassium channel regulation and adrenergic activation, sodium channel repression and facilitation of inhibitory neurotransmitter production. Esmolol may have analgesic effects in dorsal root ganglion neurons which block tetrodotoxin-resistant sodium channel activity as lidocaine. Another function of the antinociceptive activity of esmolol is the facilitation of inhibitory transmitter activation, by means of a pathway involving Ca^{2+} entry but in a β_1 -adrenoceptor-independent fashion. The role of esmolol on analgesics is unclear. In certain trials, postoperative opioid intake and pain sensitivity were reduced; however, in other trials, esmolol failed to facilitate an analgesic impact. The primary aim of this research was to evaluate the impact of infusion of esmolol on severity of pain during gastroplasty. The secondary aim was to determine the intake of remifentanyl and morphine, the period needed for analgesics, and the occurrence of side effects. The study hypothesis is that esmolol promotes a decrease in pain intensity and the total consumption of opioids.

METHODS

Forty patients aged between 18 and 50 years with American Society of Anesthesiologists (ASA) physical status scores of II and III who underwent gastric bypass were allocated to two groups. Group 1 patients received a 0.5-mg/kg bolus of esmolol in 30 mL of saline before induction of anesthesia, followed by an infusion at 15 $\mu\text{g/kg/min}$ until the end of surgery. Group 2 patients received 30 mL of saline as a bolus and then an infusion of saline. Anesthesia included fentanyl (3 $\mu\text{g/kg}$), propofol (2-4 mg/kg), rocuronium (0.6 mg/kg), and 2% sevoflurane, with remifentanyl if necessary. The following parameters were evaluated: pain intensity over 24h, remifentanyl consumption, the first analgesic request, morphine consumption, and side effects.



RESULTS

Pain intensity was lower in the esmolol group except at T0 (after extubation) and 12h postoperatively. Remifentanyl supplementation, recovery time, and postoperative morphine supplementation were lower in the esmolol group. No differences in the time to the first analgesic request or side effects were found between the groups.

	Esmolol	Saline	P
Intraoperative remifentanyl (μg)	620.0 $\pm$ 182.5	1058.8	0.001 [†] :
Number who needed remifentanyl	3	17	0.001 [†]
Time for recovery (min)	9.0 $\pm$ 3.4	12.5 $\pm$ 3.7	0.006 [†] :
First supplementation (min)	37.1 $\pm$ 16.9	33.0 $\pm$ 19,2	0.535 [†] :
Dose of morphine (mg)	7.0 $\pm$ 4.4	13.0 $\pm$ 5.7	0.002 [†] :
Number who used morphine	17	20	0.100 [†]

[†]: Wilcoxon test; [‡]: qui-square; SD: standard deviation

Intraoperative supplementation with remifentanyl (dose and number of patients needing supplementation), time until recovery, time until first postoperative first supplementation, and morphine (dose in 24 h and number of patients needing supplementation) (mean $\pm$ SD).

	Esmolol	Saline	P
T0	0 (0 - 8)	0 (0 - 8)	0.180
30 min	5 (0 - 8)	6 (2 - 10)	0.032
1 h	5 (0 - 9)	8 (3 - 10)	0.004
2 h	2 (0 - 6)	5 (2 - 8)	0.002
6 h	3 (0 - 5)	4 (1 - 7)	0.047
12 h	1 (0 - 2)	1 (0 - 3)	0.262
24 h	0 (0 - 2)	1 (0 - 2)	0.029

Wilcoxon test; T0= at recovery of consciousness

Intensity of pain at recovery (T0), after 30 minutes, 1, 2, 6, 12 and 24 h, according to numerical scale – median (minimum- maximum).



	Esmolol	Saline	P
Nausea	6 (30%)	9 (45%)	0.515
Vomiting	0 (0%)	0 (0%)	NC
Somnolence	9 (45%)	7 (35%)	1.000
Hypotension	3 (15%)	3 (15%)	1.000
Bradycardia	2 (10%)	2 (10%)	1.000
Bronchospasm	0 (0%)	1 (5%)	1.000
Fisher test; NC: not calculated			

Side effects – number (%).

CONCLUSION

Intraoperative esmolol promotes pain intensity reduction and need for supplementation, without increased risks, and represents an effective multimodal analgesic drug in obese patients submitted to gastroplastic treatment.

REFERENCE

Morais VBD et al. Randomized, double-blind, placebo-controlled study of the analgesic effect of intraoperative esmolol for laparoscopic gastropasty Acta Cir Bras. 2020;35(4):e202000408



Hybrid Minimally Invasive Versus Open Esophagectomy for Patients with Esophageal Cancer: A Health-related Quality of Life study

INTRODUCTION

Esophagectomy is the preferred curative care choice for esophageal cancer, with nearly 40 percent of patients at 5 years of age surviving relative to 10 percent of patients undergoing surgical procedures. Minimally intrusive methods for esophagectomy have been introduced in recent years which have resulted in demonstrable decreases in pulmonary risks which length of hospital stay, similar effects have been shown in certain forms of major gastrointestinal surgery. Health-related quality of life (HRQOL) and result assessments recorded by patients have been widely recognised as a primary outcome factor in the effectiveness of cancer care evaluation. Open esophagectomy (OE) has a major negative and long-lasting impact on HRQOL patients with oesophageal cancer. Minimally intrusive methods raising the severity and duration of harmful surgical impacts on HRQOL as contrasted with open surgery. One recent randomized clinical study (traditional invasive vs minimally invasive esophagectomy) indicated complete minimally invasive esophagectomy (MIE) (thoracoscopic and laparoscopic) at 1-year follow-up, was correlated with better HRQOL vs OE. The long-lasting effects of MIE remain unknown, given the HRQOL follow-up from the TIME trial was only up to 1 year.

HMIE incorporates a laparoscopic abdominal process with an open thoracotomy that can have different benefits like lower pulmonary risks, but no laparoscopic tumor dissection that reduces possible tumor spillage and enhances the technique's reproducibility. By the multicenter, retrospective, randomized clinical trial hybrid minimally invasive resection vs. open esophagectomy (MIRO), the authors have previously shown that HMIE is an oncologically appropriate treatment, which decreases the occurrence of significant morbidity especially pulmonary following cancer esophagectomy. The purpose of this present study using data obtained as part of the MIRO retrospective, randomized controlled trial is to analyze the short- and long-term effect of HMIE on HRQOL relative to OE in treating esophageal cancer.

METHODS

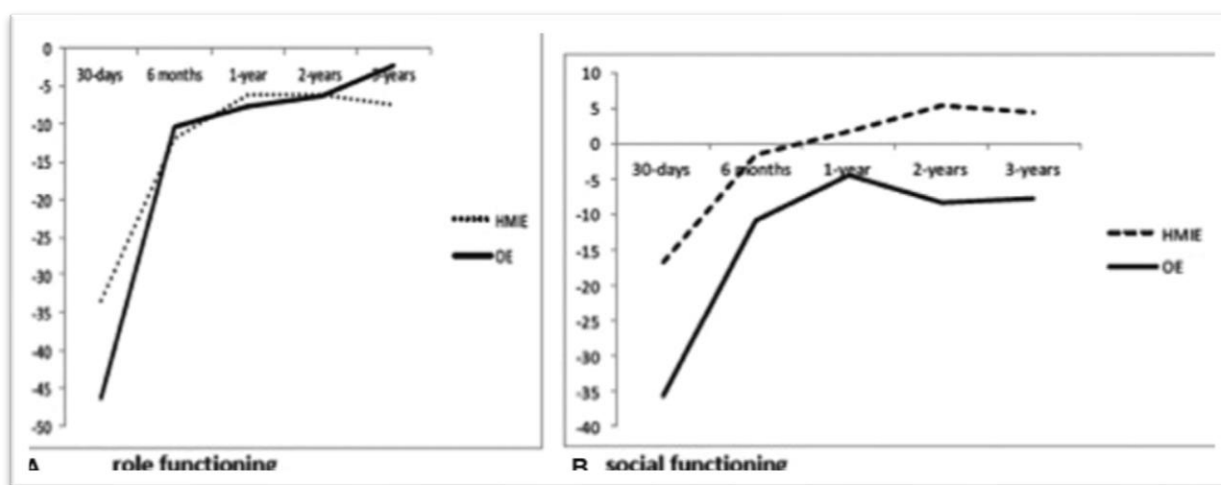
They performed a multicenter, open-label, randomized controlled trial at 13 study centers between 2009 and 2012. Patients aged 18 to 75 years with resectable cancers of the middle or lower third of the esophagus were randomized to undergo either transthoracic OE or HMIE. Patients were followed-up every 6 months for 3 years postoperatively and global health assessed with EORTC-QLQC30 and esophageal symptoms assessed with EORTC-OES18.

RESULTS

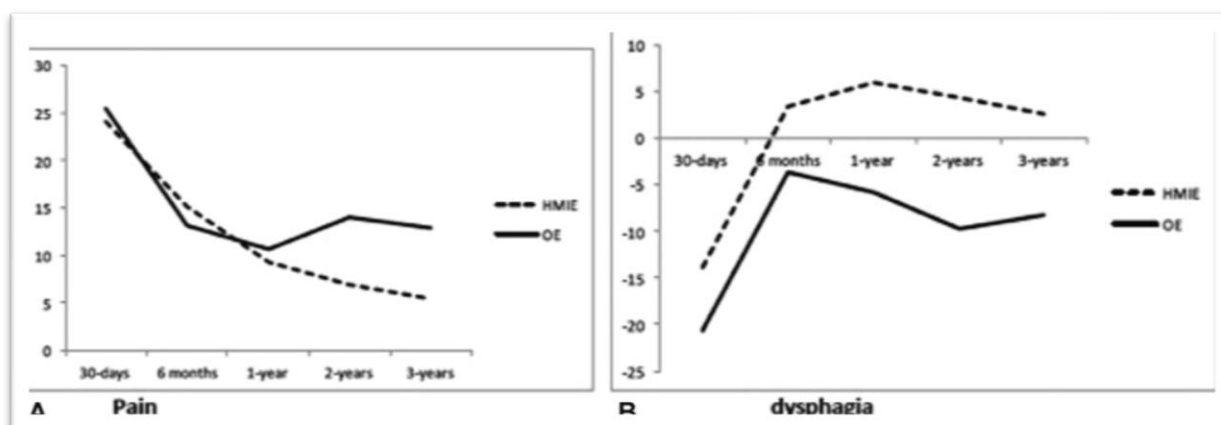
The short-term reduction in global HRQOL at 30 days specifically role functioning and social functioning was less substantial in the HMIE group. At 2 years, social functioning had improved following HMIE to beyond baseline but



remained reduced in the OE group. At 2 years, increases in pain were similarly reduced in the HMIE compared with the OE group. Postoperative complications in multivariate analysis were associated with role functioning, pain, and dysphagia.



Evolution of the differences of EORTC-QLQC30 scale, role, and social functioning scores (with respect to baseline scores) over time between the 2 treatment arms.



Evolution of the differences of EORTC QLQ-OES18 scale, pain, and dysphagia scores (with respect to baseline scores) over time between the 2 treatment arms.



CONCLUSION

Esophagectomy has significant effects on HRQOL at short term. However, these results are minimized with HMIE with certain particular conditions, with continuous variations lasting up to 2 years, and possibly induced by a decrease in postoperative complications.

REFERENCE

Mariette C, Markar S, Dabakuyo-Yonli TS, et al. Health-related Quality of Life Following Hybrid Minimally Invasive Versus Open Esophagectomy for Patients with Esophageal Cancer, Analysis of a Multicenter, Open-label, Randomized Phase III Controlled Trial: The MIRO Trial. *Ann Surg.* 2020;271(6):1023-1029.



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