Intravenous Lidocaine- Can it Lower Ileus Rate and Length of Stay in Major Colorectal Surgery? A Retrospective Analysis of ERAS Data

Background

There has been a resurgence of interest in the role of intravenous lidocaine in enhanced recovery after colorectal surgery (ERAS). A recent Cochrane review in 2018 was inconclusive of the benefits relating to postoperative pain, gastrointestinal effects and adverse effects. There have been other systematic reviews which highlighted potential postoperative benefits especially in laparoscopic colorectal surgery.

Our hospital performs on average 160 major colorectal resections annually with a 70% laparoscopic rate. Our risk adjusted length of stay > 5days is 71% (national average 69%). We have 5 full time colorectal surgeons as part of the team.

The main author administers intra-operative intravenous lidocaine infusion for all the patients anaesthetised for major colorectal surgery because of the growing evidence base to support its use.

Aims and Objectives

By analysing comprehensive data (august 2015-june 2018) collected by a dedicated ERAS nursing team, we aim to demonstrate patients receiving intravenous lidocaine have:

1. Reduction in length of stay
2. Reduction in rate of ileus postoperatively

Methods

We have 2 full time ERAS specialist nurses. Part of their responsibility is amassing postoperative data on all malignant/non-malignant major colorectal resections performed in the hospital. Key performance indicators collected included length of stay in hospital (LOS) and rates of ileus postoperatively (ROI). The time frame of the data analysed was from August 2015 to June 2018. All patients entered into the ERAS database were included in the analysis.

The intravenous lidocaine subgroup were identified as patients anaesthetised by the main author and operated by the same surgeon.

Main Results

There were 38 patients identified which received intravenous lidocaine. The dose range is 1-1.5mg/kg/hour during the entire intra-operative period. 3 patients had ileus postoperatively (7.89%). The mean LOS was 6.87 days.

In the non IV lidocaine group, there were 435 patients. 55 had postoperative ileus (12.65%). The mean LOS was 8.87 days.

For rate of ileus, there was no statistical difference between the 2 groups (Chi squared equals 0.358, P value 0.549).

However for LOS, there was statistical difference in the reduction in days. (unpaired t test, P value 0.0338).

Conclusion

We have demonstrated promising results from a retrospective analysis of our ERAS data. Intravenous lidocaine in local practice has made a reduction in length of stay with a statistical difference. This is vital in contributing to the hospital's goal to reduce overall LOS.

Although there is a significant difference in percentage of ileus rates (7.89% vs 12.65%), we were unable to show statistical difference due to the smaller sample size of the intravenous lidocaine group.

Main limiting factors for this review were small sample size of the lidocaine group and the lack of exact dose of lidocaine administered for each patient.

Moving ahead, we anticipate the use of intra-operative lidocaine will increase in our department. Future review and analysis of data with bigger numbers will be vital in revealing further positive effects of intravenous lidocaine in this group of patients.

References

1.Intravenous infusion of lidocaine starting at the time of surgery for reduction of pain and improvement of recovery after surgery; Weibel S et al;Cochrane Review; June 2018

2. A systematic review of postoperative analgesia following laparoscopic colorectal surgery; Levy et al; Colorectal Disease; December 2009 page 1463-1468

3. Can intravenous lidocaine decrease postsurgical ileus and shorten hospital stay in elective bowel surgery? A pilot study and literature review; Harvey et al; The American Journal of Surgery Volume 198, Issue 2, August 2009, Pages 231-236