

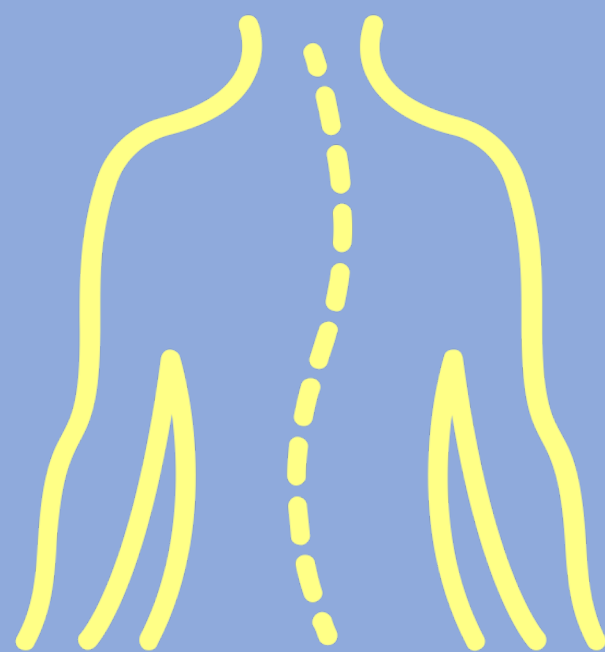
# THE EFFECT OF INTRA-OPERATIVE LIDOCAINE INFUSION ON POST-OPERATIVE OPIOID CONSUMPTION IN CHILDREN UNDERGOING POSTERIOR SPINAL INSTRUMENTATION AND FUSION FOR ADOLESCENT IDIOPATHIC SCOLIOSIS

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## INTRODUCTION

- Posterior spinal instrumentation and fusion (PSIF) for adolescent idiopathic scoliosis (AIS) can be associated with severe post-operative pain<sup>1,2,3</sup>
- Use of IV lidocaine infusion, as an opioid-sparing intra-operative adjunct, has been described in paediatric major abdominal surgery.<sup>4</sup>
- **The aim of this retrospective chart review was to assess the effect of intra-operative lidocaine infusion on post-operative total intravenous morphine consumption in AIS patients undergoing PSIF.**

## METHODS

- We performed a retrospective review of 111 patients who had undergone PSIF for AIS between January 2017 and June 2019 at our tertiary pediatric center.
- All patients received an intra-operative sufentanil infusion of 0.1-0.5 mcg/kg/hr, and then a morphine loading dose of 50-100 mcg/kg (drug-dosing weight) at the end of the procedure (or hydromorphone equivalent).
- In addition, some patients received an intra-operative lidocaine infusion of 2mg/kg/hr, at the anesthesiologist's discretion.
- Post-operatively, all patients received a multi-modal analgesic regime consisting of paracetamol, ketorolac, clonidine, and a continuous intravenous morphine infusion which was continued on the ward and weaned according to our acute pain service's protocol after 48h.
- Pregabalin was used for rescue breakthrough pain.

Variables	Lidocaine [n=9]	No Lidocaine [n=102]
Female sex	9 (100%)	81 (80%)
Age (years)	15.9 [14.0-17.1]	16.7 [15.1-18.2]
Weight (kg)	51.5 [49.8-60.3]	56.2 [49.0-66.1]
History of anxiety	1 (11%)	7 (7%)
Levels of vertebrae fused	9 [8-11]	11 [10-12]
Surgery duration (minutes)	402 [396-516]	438 [396-467]
Postoperative clonidine administration	7 (78%)	93 (91%)
Length of hospital stay (days)	4 [4-5]	5 [4-5]
Postoperative morphine consumption µg·kg <sup>-1</sup>	720 [400-770]	1341 [946-1807]

## TOTAL POST-OP IV MORPHINE

NO LIDOCAINE INFUSION

1,250 mcg/kg

Vs

LIDOCAINE INFUSION

720 mcg/kg.

## RESULTS

- Median patient age was 16.7 (IQR 15.1-18.1) years, of which 90 were female, who had a median number of levels of 11 (IQR 10-12) fused.
- Median post-operative total intravenous morphine consumption was **1,250 (IQR 897.5-1744) mcg/kg**, compared to those receiving intra-operative intravenous lidocaine (n=9) requiring **720 (IQR 400-770) mcg/kg**.
- Multivariate linear regression showed **intra-operative lidocaine infusion** (n=9; estimate: -588 mcg/kg, p=0.015) and **number of levels fused** (108 mcg/kg/level, p=0.009) had significant associations with post-operative total intravenous morphine consumption
- Male sex (n=21; -169 mcg/kg, p=0.27), age (15 mcg/kg/year, p=0.61), history of anxiety (n=8; 34 mcg/kg, p=0.88), post-operative clonidine (n=11; 132 mcg/kg, p=0.51) or pregabalin use (n=20; -115 mcg/kg, p=0.48) did not.

## CONCLUSION

Intra-operative lidocaine infusion was associated with a reduction of total post-operative intravenous morphine consumption in AIS patients undergoing PSIF. More trials are warranted to examine this opioid-sparing effect further.

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