

Continuous Wound Infusions Added to a Multimodal Analgesia Regimen for Cesarean Delivery: A Quality Improvement Practice Change Evaluation

Cedar Fowler, Emily Stocker, Dan Hoang, Nan Guo, Pervez Sultan, Ed Riley, Brendan Carvalho
Stanford University Department of Anesthesiology, Perioperative, and Pain Medicine

Introduction

Continuous wound infusions (CWI) can improve post-cesarean delivery analgesia in the absence of neuraxial morphine.¹ Limited data exists to determine if CWI provide additional analgesia in the setting of neuraxial morphine and multimodal analgesia.

The aim of this quality improvement project was to assess if CWI can provide additional post-cesarean analgesia when added to an analgesic regimen of neuraxial morphine, and scheduled acetaminophen and ibuprofen.

Methods

Following institutional IRB approval, we instituted a 4-month quality improvement project. During this period, we placed CWI (On-Q silversoaker catheter with 0.5% bupivacaine at 4ml/h for up to 72hrs) for all scheduled elective cesarean deliveries on an alternate week schedule (CWI for a week then no CWI the next week).

Standard post-operative care consisted of IT morphine, intraoperative & scheduled acetaminophen and ibuprofen. Breakthrough pain was managed with oxycodone as needed.

Results

The primary aim of the study was opioid usage during hospitalization. We analyzed electronic medical records and routine follow-up survey data to determine the impact of CWI added to our standard multimodal analgesia regimen for cesarean delivery.

- All elective scheduled cesarean deliveries (n=139; 69 standard care group & 70 with CWI) were included in the analysis.
- 68% (47/69) in the standard care group vs 57% (40/70) in the CWI group required opioids (p=0.22) during the post-partum hospitalization period.

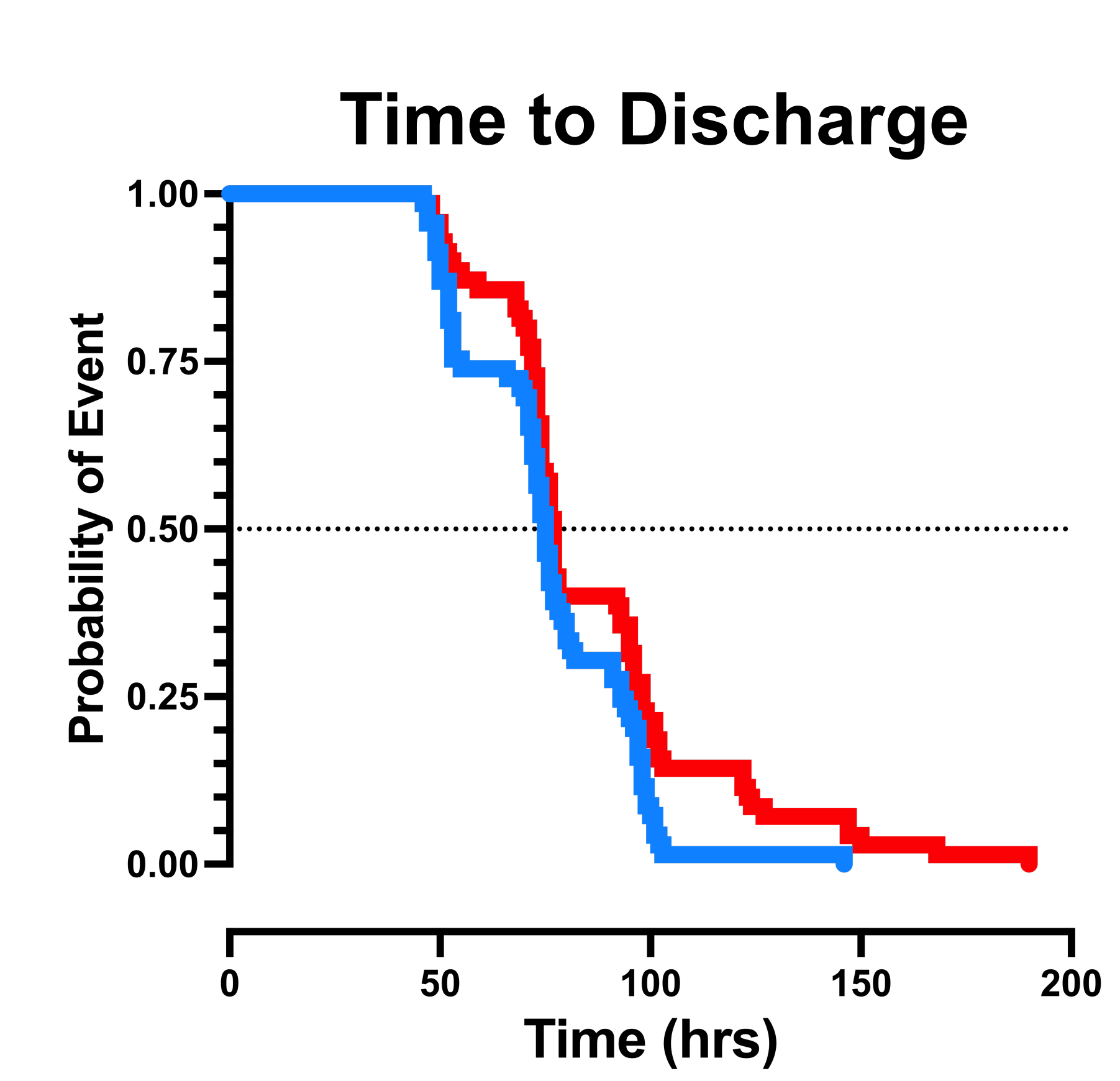


Figure 1: Kaplan Meier curve- total length of hospitalization of Standard Group vs CWI group

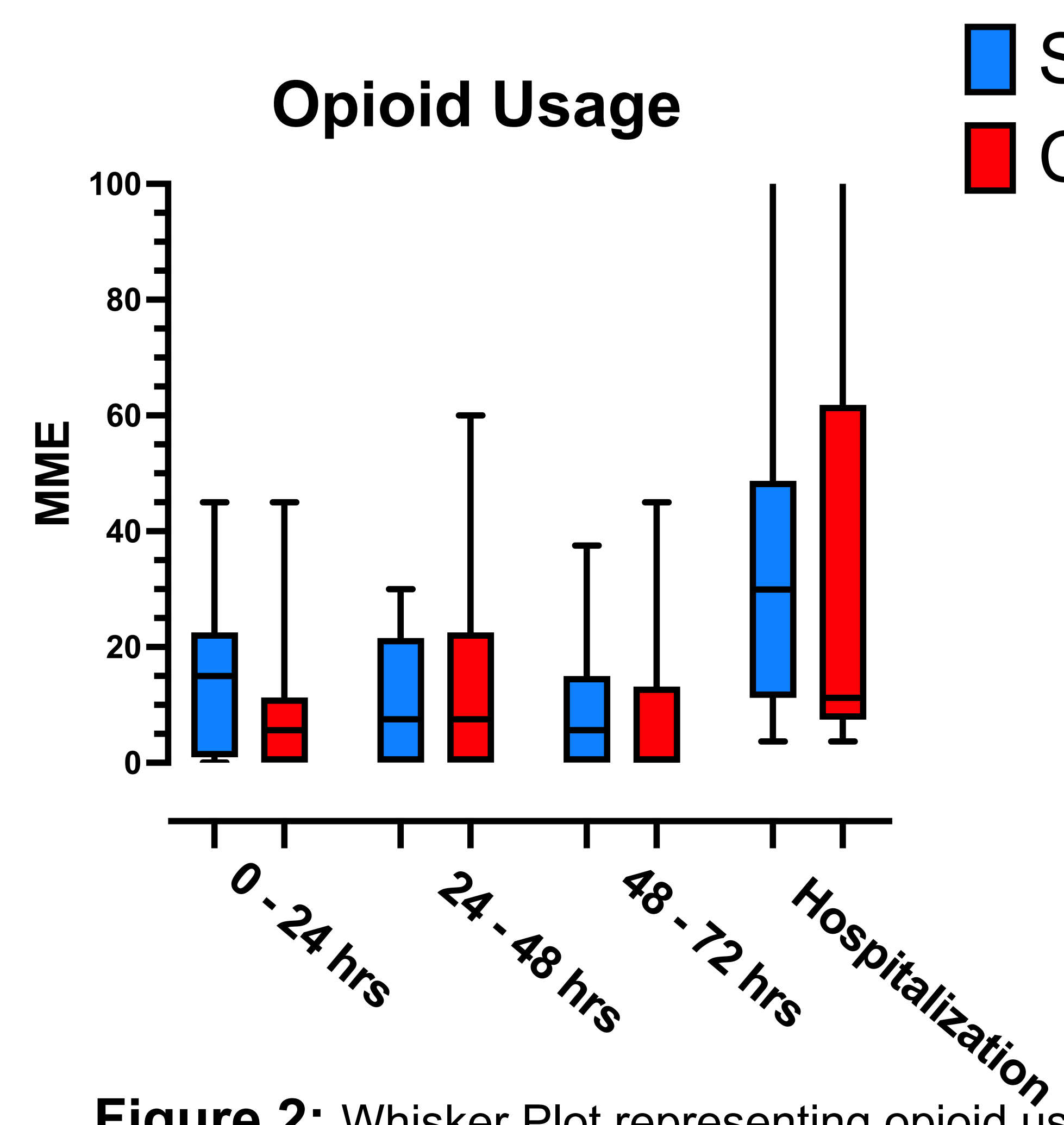


Figure 2: Whisker Plot representing opioid usage: 0-24 hrs, 24-48 hrs, 48-72 hrs, and total opioid usage

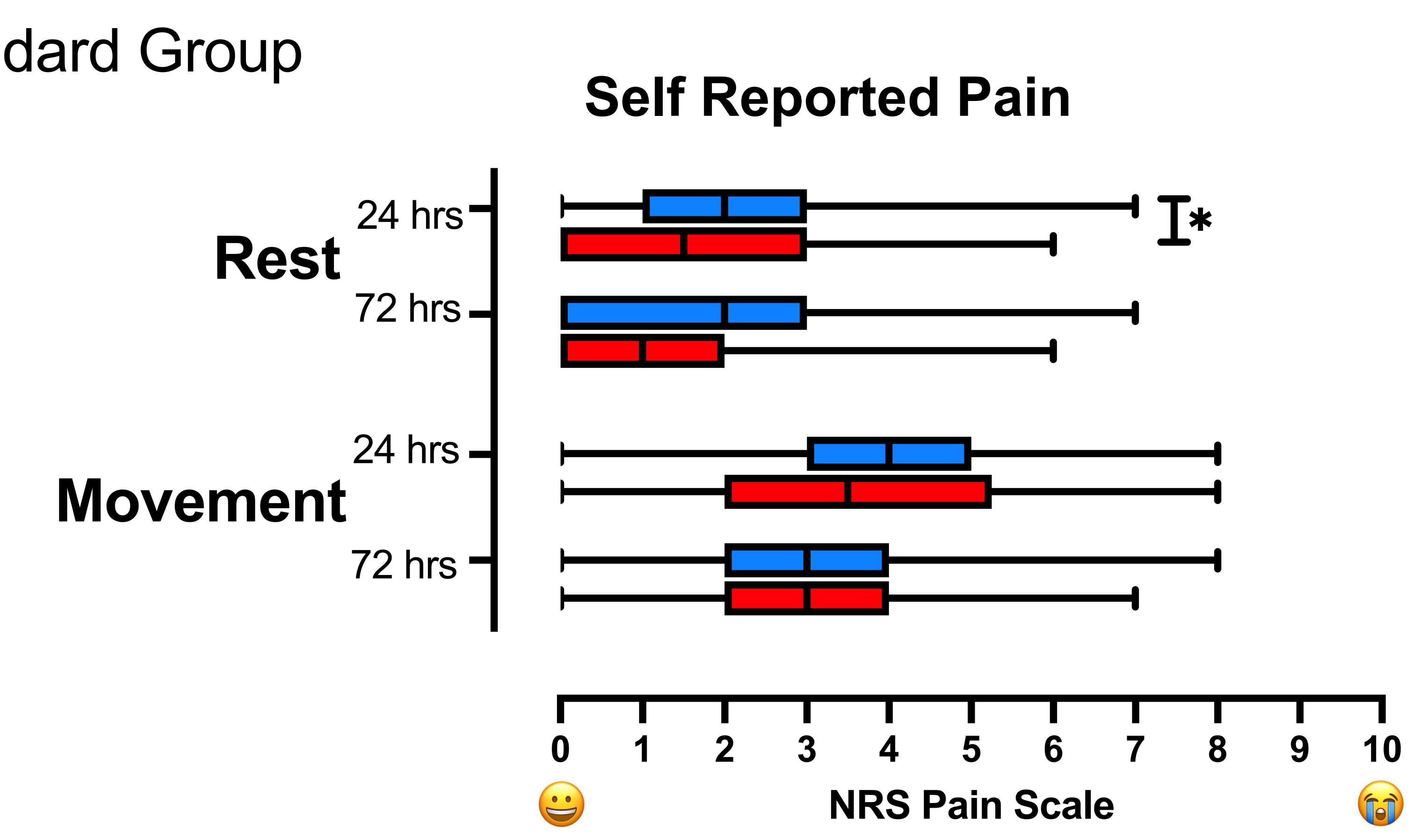


Figure 3: Whisker Plot representing self reported pain scores at rest and with movement at 24 hours and at 72 hours

Conclusions

- Our findings suggest that the addition of a CWI to a comprehensive multimodal analgesia regimen did not significantly impact opioid consumption following cesarean delivery.
- The modest improvement in rest pain and maternal satisfaction needs to be balanced with increased cost of the medication and devices. Future studies are needed to determine benefits of CWI in women with chronic pain, opioid-use disorder or those at risk for severe pain and higher opioid use.

References

1. Patel et al. Int J Obstet Anesth 2019;40:62–77