Comparing the Addition of Rectus Sheath Block to Erector Spinae Plane Block Cardiac Surgery: A Retrospective Cohort Study

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INTRODUCTION

- Erector spinae plane block (ESPB) is a type of fascial plane block that has been increasingly researched in cardiac surgery, however, systematic reviews and meta-analyses of randomized controlled trials have demonstrated inconsistent findings in its ability to lower pain scores, reduce opioid consumption, and improve clinical outcomes.
- These findings were consistent with the prior retrospective study we conducted following the initiation of ESPB in cardiac surgery at our institution and was felt to be due to the lack of analgesia coverage to chest tube sites by ESPB
- This resulted in the addition of rectus sheath block (RSB) and the combined approach of RSB and ESPB in cardiac surgery via median sternotomy

MATERIALS & METHODS

- Retrospective chart review of patients aged 18 to 89 years who underwent CABG, isolated AVR or MVR, or CABG and AVR or MVR
- The combined block group was compared separately to each group
- Patients were stratified by analgesic intervention
  - Combined block group – received RSB and ESPB
  - RSB group – received RSB alone
  - ESPB group – received ESPB alone
  - Non-block group – received conventional systemic analgesia

AIMS

Primary: To evaluate whether this combined approach was associated with reduced opioid consumption (MMEs) and lower pain scores (CPOT, NRS)

Secondary: To evaluate if this approach was associated with a decreased time to extubation and shorter intensive care unit (ICU) and postoperative length of stays

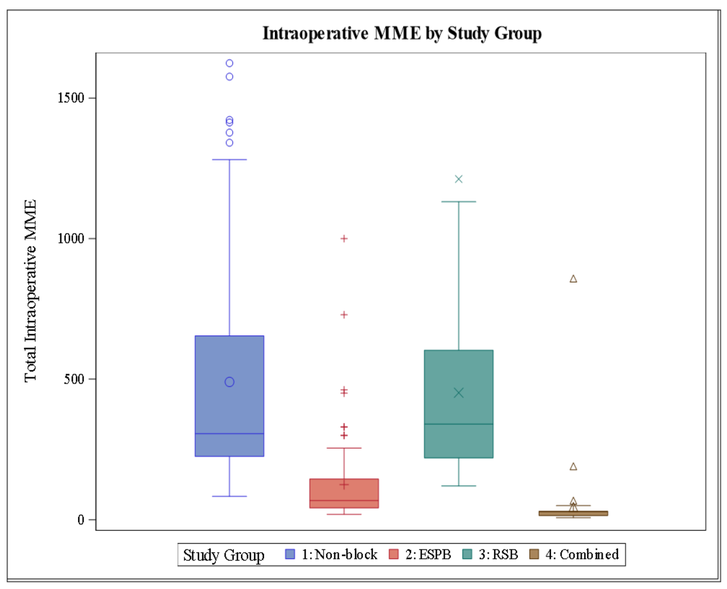
RESULTS

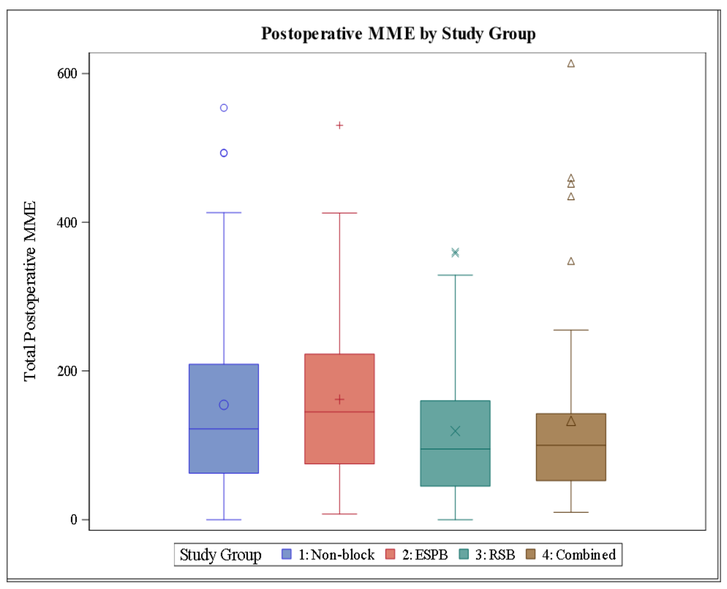
A priori analyses demonstrated

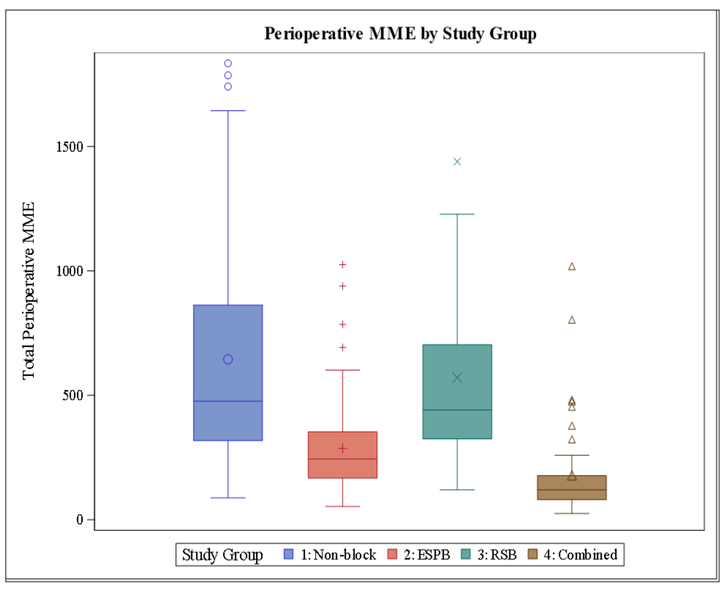
- Intraoperative and cumulative perioperative opioid consumption were both significantly lower in the combined block group
- Verbal pain scores were significantly lower in the combined block group than in the non-block group during the 24-to-36- and 36-to-48-hour intervals
- The length of time to extubation, ICU, and postoperative length of stay were significantly longer in the combined block group than in the ESPB group

Exploratory post hoc analyses demonstrated

- The independent association between the combined block approach and total intraoperative and perioperative opioid consumption persisted after multivariable adjustment
- Age and the initiation of PCA therapy were independently associated with opioid consumption
- Opioid consumption was significantly lower in the combined block group and significantly higher in patients aged less than 55 years and those initiated on PCA therapy

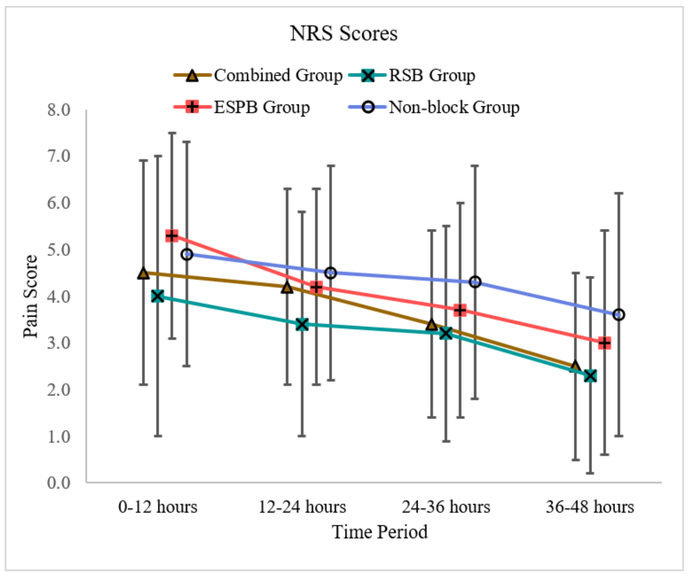






CONCLUSSION AND KEY POINTS

- The combined use of RSB and ESPB performed in adult patients prior to cardiac surgery via median sternotomy is associated with reduced opioid consumption and lower pain scores but is not associated with a shorter time to extubation or shorter ICU and postoperative length of stay
- The significant reduction in opioid consumption during the perioperative period (intraoperative to 48 postoperative hours) in the combined block approach was driven by the vast difference in intraoperative opioid consumption
- Because patient age is unmodifiable, our findings suggest that initiation of PCA therapy may represent a key modifiable clinical factor associated with higher postoperative opioid consumption



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