SHRI DHARMASTHALA MANJUNATHESHWARA UNIVERSITY

"To Compare Analgesia Following Different Volumes of Local Anaesthetic for Erector Spinae Plane Block in Patients Undergoing Lumbar Spine Surgery; A Prospective Randomised Double-Blind Study"

By,

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Dissertation submitted to Shri Dharmasthala Manjunatheshwara University, Dharwad, Karnataka, in partial fulfillment of the requirements

for the degree of

Doctor Of Medicine in Anesthesiology

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2019 - 2022

Abstract

Title: To Determine the Effective Volume of Local Anaesthetic for Analgesia Following Erector Spinae Plane Block in Patients Undergoing Lumbar Spine Surgery Under General Anaesthesia; A Prospective Randomised Double-Blind Study

Background and Aims: Erector spine plane block (ESP) is regional anaesthetic technique, proven to be effective for lumbar spine surgeries. Desired volume of Local Anaesthetic (LA) for the effective block has not been well studied. Aim of this study is to determine the effective volume of local anaesthetic for ESPB for optimal analgesic effect undergoing lumbar spine surgery.

Methodology: It was prospective randomised double-blind study, consisting of 120 patients aged 18-70 years undergoing lumbar laminectomy and discectomy under GA. They were divided into 4groups and received USG guided ESP block of different volumes 10,15,20,25ml of Bupivacaine 0.25% on each side. All received intravenous Diclofenac 75 mg twice daily. Postoperative pain was assessed using NRS score for 48hrs and NRS≥ 3 intravenous paracetamol 1gm and intravenous Tramadol was given as rescue analgesic. Time for first analgesic required was noted. The categorical data and continuous data were analysed through chi square test, One way ANOVA. When the difference between the group was found, post hoc analysis was done using Dunn's test.

Results: There was no difference between groups for demographic parameters. Time of need of the first rescue analgesic was significantly longer in group 20 and 25ml when compared with group 10 and 15ml. Mean pain scores, rescue analgesic requirement in 48 hours (2.6±0.81, 2.35±0.57, 2.1±0.31, 1.9±0.1, in 10, 15, 20, 25 ml respectively with p value < 0.001) was significantly different

between the groups. Bonferroni correction indicated the significant difference between 10 and 15ml compared to 20 and 25ml group.

Conclusion: In our study we conclude that minimum of 20 ml of 0.25% bupivacaine on each side was effective volume of local anaesthetic for optimal analgesic effect in patients undergoing lumbar laminectomy and discectomy surgeries.

Key words: Erector spinae plane block, regional anaesthesia, postoperative pain, Lumbar spine surgery.