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**COMPARATIVE STUDY OF THE EFFECTIVENESS OF
VAPOCOOLANT SPRAY VERSUS EMLA®® CREAM IN REDUCING
PAIN DURING INTRAVENOUS CANNULATION IN ADULT
POPULATION**

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TITLE PAGE

1. Title- COMPARATIVE STUDY OF THE EFFECTIVENESS OF VAPOCOOLANT SPRAY VERSUS EMLA®® CREAM IN REDUCING PAIN DURING INTRAVENOUS CANNULATION IN ADULT POPULATION

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ABSTRACT:

INTRODUCTION: Intravenous cannulation is a prerequisite before any procedure. EMLA (Eutectic Mixtures of Local Anesthetics) cream and vapocoolant spray are means for alleviating pain during i.v cannulation. EMLA®® cream is oil and water based emulsion containing lignocaine and prilocaine. Vapocoolant spray containing volatile agents like ethyl chloride produces expeditious evaporation of the agent from the skin surface leading to a temporary and swift interruption of pain sensation.

METHOD: The study encompassed 140 patients requiring intravenous cannulation prior to elective procedure who were divided into two groups. The primary objective of the study was to compare the Visual Analog Scale scores between the two groups where one group utilized vapocoolant spray prior to intravenous cannulation versus EMLA as the comparator agent. The hemodynamic variables were also studied during the study. The secondary objective was the cost analysis between the two agents to identify which agent is more cost beneficial.

RESULTS: It was observed that the two groups were similar to each other in terms of age, sex and ASA physical status. The mean VAS score for pain in patients in Vapocoolant group was

1.27±1.191 and EMLA group was 3.83±0.851. Tachycardia was observed to be higher in the EMLA®® group (105.6±8.6 bpm) as compared to the Vapocoolant group (92.8±15.3 bpm). No changes were observed in the other hemodynamic parameters. Only 25.7 % of the participants in vapocoolant group moved their hands during intravenous cannulation as compared to the 58.6% of the participants in EMLA®® group. Vapocoolant spray was also cheaper as compared to EMLA®® cream with occlusive dressing.

CONCLUSION: Vapocoolant spray is a better tool as compared to EMLA cream for intravenous cannulation especially in emergency settings.

Keywords:

EMLA cream, Vapocoolant spray, intravenous cannulation, haemodynamics, VAS score