Study Investigated The Effect Of Pre-operative Low Dose Of I.v Ketamine On Tourniquet Induced Pain And Haemodynamic Changes After Brachial Plexus Block. Just Before Application Of Tourniquet 0.25mg/kg I.v Ketamine (Ketamine Group N=40) Diluted To 5ml And Control Group N=38 5ml Were Administered. Systolic, Diastolic Blood Pressure And Heart Rate Relative To Tourniquet Inflation And Deflation Were Recorded And Compared Between The Two Groups. Systolic, Diastolic And Mean Blood Pressure Increases Significantly After 30 Minutes Of Tourniquet Inflation In Control Group As Compared To Ketamine Group.so, We Conclude That Pre Operative Low Dose 0.25mg/kg Of I.v Ketamine Can Prevent A Systemic Arterial Pressure Increase After Tourniquet Inflation Under Supraclavicular Brachial Plexus Block.

**Keywords**: Pain, Tourniquet Pain, Low Dose Ketamine, Supraclavicular Brachial Plexus Block

**Inclusion Criteria**: 1. Patients Belonging to ASA-I and II 2. Both sexes 3. Age 18-60 yrs. 4. Patients undergoing upper limb surgery under supraclavicular block where tourniquet is used


**Aims and Objective**
- To examine the effect of low dose ketamine on pain reduction and haemodynamic parameters on tourniquet application on upper limb blocks.
- To compare the incidence of hypertension due to tourniquet induced pain in patients receiving low dose ketamine vs. placebo.
- Secondary, to evaluate the adverse effects of IV ketamine and any other observations.

**Materials and Methods**
- Ethical Clearance- Institutional Ethical Committee, GMCH, Assam.
- Duration of Study: July 2018 to June 2019.
BLOCK USING 0.5% ROPIVACAINE ACCORDING TO
STANDARD INSTITUTIONAL PROTOCOL.
• DRUGS WERE DELIVERED JUST BEFORE APPLICATION OF
TOURNIQUET AFTER CONFIRMING THE SUCCESS OF
 THE BLOCK.
• ANY CASE WITH BLOCK FAILURE OR NOT ADEQUATE
FOR THE SURGERY WAS EXCLUDED FROM THE STUDY.
• VITALS WERE MONITORED BY A JUNIOR TRAINED
RESIDENT AT AFOREMENTIONED TIME PERIOD.

RESULTS
• DATA COLLECTED AND ANALYZED.
• STATISTICAL TESTS EMPLOYED WERE (AS
APPLICABLE) PaireD AND UNPAIRED T-TEST
FISHERS EXACT TEST
• CHI-SQUARE TEST.
• SOFTWARE USED-GRAPHPAD INSTAT VERSION 3.0
• MICROSOFT WORD AND MICROSOFT EXCEL WERE USED TO
GENERATE GRAPHS AND TABLES.
• P VALUE – P<0.05 WAS CONSIDERED SIGNIFICANT.

DISCUSSION
• FROM OUR STUDY WE CONCLUDE THAT-
• THERE WAS SIGNIFICANT DIFFERENCE IN BLOOD
PRESSURE BETWEEN THE TWO GROUPS AT 30, 40, 50
AND 60 MINUTES AFTER THE TOURNIQUET INFLATION.
• THERE WAS NON-SIGNIFICANT DIFFERENCE IN HEART
RATE BETWEEN THE TWO GROUPS IN ALL POINT OF
TIME.
• POST-OPERATIVELY, DURING THE STUDY TIME FRAME
THE MEAN VAS SCORE IN BOTH THE GROUPS WAS LESS
THAN 4, AND WAS STATISTICALLY NON-SIGNIFICANT.
• THERE WAS NO ADVERSE EFFECT ASSOCIATED WITH
LOW DOSE OF KETAMINE.

LIMITATIONS:
• POTENTIAL FOR BIAS MAY EXIST DURING BLINDING.
• STUDY CONDUCTED ON NORMAL PATIENTS SO RESULT
CANNOT BE EXTRAPOLATED TO PATIENT WITH
HYPERTENSION OR OTHER CO-MORBIDITIES.
• IDEALLY INVASIVE BP MONITORING WOULD HAVE
BEEN MORE INFORMATIVE TO CAPTURE MORE
FREQUENT BP READINGS.

CONCLUSION
• AFTER CLINICALLY STUDYING THE EFFECT OF LOW
DOSE KETAMINE (0.25MG/KG BODY WEIGHT) IN
PATIENTS UNDERGOING UPPER LIMB SURGERIES
USING TOURNIQUET UNDER BRACHIAL PLEXUS BLOCK
FOLLOWING CONCLUSIONS WERE DRAWN:
• A SOUND ANATOMICAL KNOWLEDGE OF THE
BRACHIAL PLEXUS IS NECESSARY FOR PROVIDING
ANAESTHESIA FOR SURGERIES OF THE UPPER
EXTREMITIES.
• THE LOCAL ANAESTHETIC ROPIVACAINE IN THE
CONCENTRATION AND VOLUME USED WAS SAFE AND
EFFECTIVE FOR PROVIDING ANAESTHESIA AND
ANAEGESIA WITHOUT ANY SIGNIFICANT
NEUROLOGICAL, CARDIOVASCULAR OR RESPIRATORY
DISTURBANCES.
• THE BLOOD PRESSURE CHANGE DUE TO THE USE OF
TOURNIQUET CAN BE PREVENTED BY USING LOW
DOSE KETAMINE (0.25MG/KG).
• THE ADVERSE EFFECT ASSOCIATED WITH USUAL DOSE
KETAMINE IS NOT SEEN WITH THE USE OF LOW
DOSE KETAMINE (0.25MG/KG).

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