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Original Research Paper

A COMPARATIVE STUDY OF PHENYLEPHRINE AND EPHEDRINE IN CONTROLLING HYPOTENSION IN PARTURIENTS AFTER SPINAL ANESTHESIA IN CAESAREAN SECTION SURGERIES.

Anaesthesiology

KEYWORDS: CAESAREAN SECTION,HYPO TENSION,SPINAL ANESTHESIA

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ABSTRACT

HYPOTENSION AFTER SPINAL ANESTHESIA (LESS THAN 90 mm.Hg SYSTOLIC OR MORE THAN 20% FALL FROM BASELINE BP)IN CAESAREAN SECTION SURGERIES IS A SERIOUS COMPLICATION CAUSING NAUSEA , VOMITING AND DECREASED UTERINE PERFUSION AND FOETAL BLOOD FLOW.THIS HYPOTENSION IS DUE TO 1.SUPINE HYPOTENSION DUE TO AORTO –CAVAL COMPRESSION BY GRAVID UTERUS AND 2.DECRESED VENOUS RETURN TO HEART BY PERIFERAL VASCULAR DILATATION CAUSED BY SPINAL SYMPATHETIC BLOCK.VASO PRESSORS LIKE PHENYLEPHRINE AND EPHEDRINE ARE WIDELY USED AROUND THE WORLD TO MANAGE THE DANGEROUS HYPOTENSION FOR BETTER MATERNAL AND FOETAL OUTCOMES.

INCLUSION CRITERIA: ASA 1 &ASA 2 PATIENTS

EXCLUSION CRITERIA: IUGR BABIES, SEVERE PRE ECLAMPSIA PATIENTS & PRE MATURE BABIES.

METHODOLOGY: IT IS A RANDOMISED PROSPECTIVE STUDY. AFTER GETTING ETHICS COMMITTEE APPROVAL AND GETTING INFORMED CONSENT FROM THE PATIENTS ,THEY WERE DIVIDED INTO 2 GROUPS OF 50 PATIENTS EACH.

1.GROUP: HYPOTENSION AFTER SPINAL WAS MANAGED WITH PHENYLEPHRINE 30 -50 Mcg BOLUSES AND CRYSTALLOIDS (RL/NS).

2.GROUP: HYPOTENSION AFTER SPINAL WAS MANAGED WITH EPEDRINE 6 Mg BOLUSES AND CRYSTALLOIDS(RL/NS).

DRUGS USED:

1.PHENYLEPHRINE :A POTENT ALPHA 2 AGONIST CAUSING VASO CONSTRICTION AND RAISING BLOOD PRESSURE.IT IS AVAILABLE AS 1 ML AMPOULE OF 10 Mg PER ML.IT IS THEN DILUTED TO 100 Mcg PER ML.IT HAS A DEPENDABLE FASTER ONSET AND SHORTER DURATION OF ACTION.IT DOES NOT CROSS PLACENTAL BARRIER. IT CAN CAUSE REFLEX BRADYCARDIA.

2.EPHDRINE:A SYMPATHOMIMETIC DRUG ACTING DIRECTLY ON ALPHA 1&2 ADRENERGIC RECEPTORS AND INDIRECTLY BY RELEASING NOR EPINEPHRINE. IT IS AVILABLE AS 1 ML AMPOULE OF 30 Mg. IT IS THEN DILUTED TO 6 Mg PER ML. THOUGH WIDELY USED IT HAS A SLOW UNPREDICTABLE ONSET AND LONGER DURATION OF ACTION.IT CAUSES TACHYCARDIA AND CAN CAUSE FOETAL ACIDOSIS SINCE IT CROSSES PLACENTAL BARRIER.

RESULTS OF THE STUDY:

GROUP 2: OUT OF 50 CASES MORE THAN 25 PATIENTS HAD A SIGNIFICANT FALL IN BP , EVEN WITH A WEDGE UNDER RIGHT BUTTOCK CAUSING LATERAL TILT OF GRAVID UTERUS. 10 CASES HAD TO BE GIVEN MORE THAN 12 Mg OF EPHEDRINE BOLUSES ALONG WITH CRYSTALLOIDS(RL/NS).

GROUP1: OUT OF 50 CASES MORE THAN 25 PATIENTS AGAIN HAD A SIGNIFICANT FALL IN BP,EVEN WITH A WEDGE UNDER RIGHT BUTTOCK CAUSING LATERAL TILT OF GRAVID UTERUS.THEY WERE TREATED WITH 30-50 Mcg BOLUSES OF PHENYLEPHRINE AND CRYSTALLOIDS(RL/NS) .NONE HAD A SEVERE REFLEX BRADYCARDIA, A THEORETICAL CONCERN,REQUIRING DRUG INTERVENTION.

CONCLUSION: THOUGH EPHDRINE IS WIDELY USED AROUND THE WORLD TO TREAT THE HYPOTENSION CAUSED BY SPINAL ANESTHESIA IN CAESAREAN SECTION SURGERIES ,BECAUSE OF IT'S SLOW UNPREDICTABLE ACTION, RESULTING TACHYCARDIA AND FOETAL ACIDOSIS BY CROSSING THE PLACENTA MAY AFFECT THE MATERNAL AND FOETAL OUTCOMES.

WITH THE USAGE OF PHENYL EPHRINE IN LOW DOSES (30-50 Mcg BOLUSES) THE FEARED REFLEX BRADYCARDIA IS NOT OBSERVED IN ALL CASES.IT'S FASTER PREDICTABLE ONSET AND BY NOT CROSSING THE PLACENTAL BARRIER IT HAS BETTER MATERNAL AND FOETAL OUTCOMES IN OBSTETRIC PATIENTS.

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