Original Research Article

COMPARISON OF EFFICACY OF PRELOADING WITH0.9% NORMAL SALINE WITH PREMPTIVE DOSE OF EPHEDRINE FOR ATTENUATION OF HEMODYNAMIC RESPONSE DURING PROPOFOL INDUCTION

ABSTRACT:

Two different regimes propofol-normal saline vs propofol -ephedrine in prevention of hypotension during induction of anaesthesia, significant decrease in Systolic blood pressure (P<0.001) in both groups (both fluid and non-fluid groups) after induction of anaesthesia with propofol was observed. The incidence of hypo-tension was significant in control and crystalloid group when compared with ephedrine group. Systolic blood pressure decreased in all three groups and decrease in Systolic blood pressure at 2min, 3min and 5min with P values. 0.010, 0.00, 0.000 respectively. Also decrease in Mean Arterial pressure in P group when compared with E-group at 1, 2, 3, 4, and 5min with P values 0.038, 0.02, 0.012 and 0.029 respectively.

Keywords:anesthesia,mean arterial pressure,hypotension

Introduction:

Propofol is a widely used induction agent owing to its advantages like rapid induction and recovery, less incidence of post operative discomforts. Hypotension is one of the major disadvantage of this propofol and hence various measures have been take to avoid this by pre-loading with fluids and use of vasopressors including ephedrine, dopamine and dobutamine[1-2]. The present study compared two different regimes, 0.9% Normal Saline and intra venous ephedrine for prevention of hypotension during induction of anaesthesia with propofol.

Methodology:

Patients were assigned by pre-randomized sealed envelopes into two groups. They were pre-medicated with Injections. Group P with 25 patients were pre-loaded with 0.9% NormalSaline 20ml/kg 20minutes before surgery and group E with 25 patients were given 0.2mg/kg of ephedrinealong with propofol. Variables like Heart rate, Systolic blood pressure, Diastolic blood pressure, Mean Arterial pressure were measured before induction (baseline) during induction and at 1, 2, 3, 4 and 5 minutes respectively.

Results:

In the P group theheart rate from base line has increased from 90.72 ± 15.523 /min to 91.04 ± 22.661/minpost inductionand has further increased to 91.36±15.030/min at 1min and finally decreased to 91.60 ±15.761 at 5 mins. In the Ephedrine group the percentage of change of heart rate from base line has increased from 91.64 ± 12.589/ min to

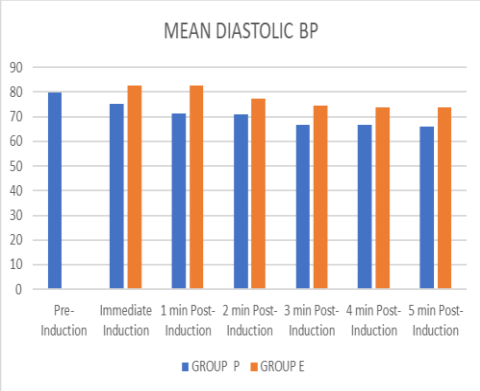
98.88 ± 13.935/min post induction and has further increased to 1.96 ±13.412 at 1 min and reached to 103.12 ± 15.273/min at 5 mins. On comparing the P group and ephedrine at varied intervals the decrease was not statistically significant in P group. (P<0.05)(Table:1).

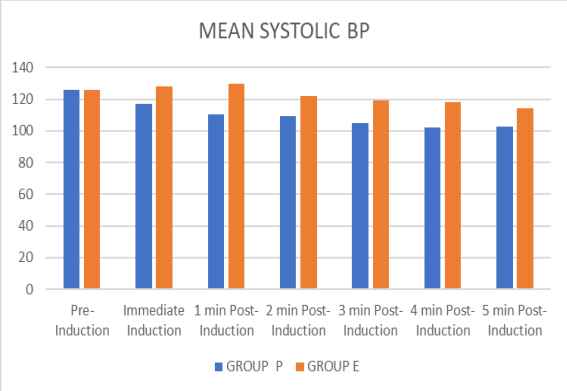
Table 1: Comparison of mean pulse rate among thegroups

Pulse Rate (beats/min)	**Group P (n = 25)**	**Group E (n = 25)**	**P valueP v/s E**
Pre- Induction	90.72 ± 15.523	91.64 ± 12.589	0.039
Immediate Induction	91.04 ± 22.661	98.88 ± 13.935	0.072
1 min Post- Induction	91. 36 ± 15.030	102 .96 ±13.412	0.020
2 min Post- Induction	92.12 ± 16.481	104.60 ± 13.134	0.0 21
3 min Post- Induction	92.32 ± 16.v51	105.20 ± 14.370	0.0 21
4 min Post- Induction	92.48 ± 15.854	104.60 ± 14.737	0.622
5 min Post- Induction	91.60 ± 15.761	103.12 ± 15.273	0.050

Figure:1 Mean diastolic blood pressure

Figure:2 Mean systolic blood pressure





The change in the systolic blood pressure was maximum post induction which was noticed in the ephedrine group followed by P group. However, on comparing them at varied intervals the decrease was not statistically significant in Ephedrine group. ($P<0.05$) (figure:1) In the P group, the diastolic blood pressure from base line has decreased from 79.64 ± 6.903 mmHg to 75.36 ± 9.699 mmHg post induction and -71.40 ± 9.815 mmHg at 1 min and to 66.04 ± 7.898 at 5 mins. In the ephedrine group the diastolic blood pressure from base line has increased from 80.08 ± 6. 763 Mm Hg to 82.56 ± 8.052 mmHg (Figure:2).

Discussion

It is very evident from the above results that there is a statistically significant decrease in Systolic blood pressure ,Diastolic blood pressure, Mean arterial pressure in the pre-loaded group($P<0.05$) when compared to the E-group at various time intervals. The observations were consistent with the study conducted by R.J.Turner et al, Vikas Dutta et al[3-5],where there was a significant decrease in Systolic blood

pressure (P<0.001) in both groups with propofol. The incidence of hypo-tension was significant in control and crystalloid group when compared with ephedrine group. In our study, there had been a statistically significant increase in Systolic blood pressure at 2min, 3min and 5min respectively in E group when compared with P group and decrease i n Diastolic blood pressure in P group when compared with E- group at lmin, 2min, 3min, 4min and 5min with P values these results are consistent with study conducted by the study conducted by Gamlin, also proved that there had been a statistically significant increase in base line systolic (P=0.004) and diastolic (P=0.031) pressures, with addition of ephedrine. From the above study it's clear that, administration of ephedrine helps to attenuate the fall in blood pressure in response to propofol + fentanyl induction than pre-loading with 0.9% Normal saline.

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