PULMONARY VASODILATOR EFFECTS OF NOREPINEPHRINE IN COMBINATION WITH HIGH EPIDURAL ANALGESIA DURING THE THORACOSCOPIC CORRECTION OF ESOPHAGEAL ATRESIA

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Goals

Evaluation of the respiratory and the pulmonary circulatory effects of Norepinephrine (NE) infusion in combination with high epidural analgesia (EA) in newborns

- Change dynamics of SpO₂ after surgery start, one-lung ventilation in patient on side position.
- Demonstration of possibility to decrease FiO₂ as a pulmonary circulatory effects manifestation.

Methods

- 10 newborns, gestation age 35±3 weeks, birth weight 2800±700g were scheduled for thoracoscopic correction of esophageal atresia.
- Surgeries were taken under the high EA as a component of general anesthesia with infusion of NE.
 - Single shot EA (20G Touchy needle) on the level Th4-Th5 Sol.Bupivacaini 0,1% - 0,3ml/kg
 - General Anesthesia (GA) was maintained by Sevorane, Atracurium.
 - NE 0,3-1 mkg/kg/min.
- Monitoring: ECG, BP, EtCO₂, SpO₂, HR, active warming

Results

- GA, patient on side position, CO₂ insufflation, one-lung ventilation initiate decrease SpO₂ till 85±2%. The single shot EA and start of prolonged infusion of NE could bring to SpO₂ increase till 93±3%. (Fig.1)
- The single shot EA and start of prolonged infusion of NE during the thoracoscopic correction of esophageal atresia makes possible to decrease FiO₂ from 50% to 40% without decreasing SpO₂. (Fig,2)
- After starting NE the BP and HR increased for 20,2 ±3.8 mm Hg and 8,4±1,6 r/min respectively.

Conclusion

NE in condition with effective high epidural analgesia may improve lung function in newborn with pulmonary hypertension (induced by thoracoscopy), increase SpO₂ with following possibility to decrease FiO₂ in 10%.

References

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Fig.1

Fig.2

Discussion