13th Annual Scientific Conference & Gathering

Theme:
Environmental Virology, Exposomics and Epigenetics

Venue:
Old Great Hall, College of Medicine, University of Lagos, Idi Araba, Lagos State

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Time:
8.00 am - 5.00 pm
Does the Laryngeal Mask Airway Attenuate the Rise in Plasma Catecholamine Associated with the Laryngopressor Response?

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Background: Laryngopressor response, a known complication following endotracheal intubation is accompanied by the release of catecholamines. This results in haemodynamic changes like tachycardia, arrhythmias and hypertension. The laryngeal mask airway, a newer airway device has been known to attenuate this response. The aim of this study was to compare the changes in plasma catecholamine and haemodynamics following the use of the two airway devices.

Methods: This was a prospective randomized study in which 60 adult patients were allocated into 2 groups: Group A (ETT) and Group B (LMA) following induction of anaesthesia with propofol 2-3mg/kg and atracurium 0.5mg/kg. Introduction of airway device was done 5 minutes after muscle relaxation. Nor epinephrine and epinephrine levels were measured before airway instrumentation and 1 and 5 minutes after. Haemodynamic variables were recorded before and 1,2,3,4,5 and 10 minutes after airway instrumentation.

Results: Both groups exhibited a significant increase in norepinephrine 1 minute after insertion (p<0.001) which remained elevated above baseline at 5 minutes. The mean norepinephrine levels in ETT group were significantly higher than LMA group at 1 minute after insertion (p=0.017). There was a significant increase in epinephrine 1 minute after intubation in ETT group (p<0.05), but not in the LMA group. The difference in mean epinephrine in both groups at 1 and 5 minutes post insertion were not significant (p=0.31 and 0.46 respectively). There was a significant increase in heart rate and MAP one minute after introduction of airway device (p<0.05). The rise in MAP at the first and second minute post insertion was significantly higher with the ETT group (p<0.05).

Conclusions: Laryngoscopy and tracheal intubation give rise to elevation in plasma catecholamines with resultant increase in haemodynamic variables. LMA insertion however, gives an attenuated response and may offer some advantages over tracheal intubation in susceptible patients.

Keywords: Laryngeal mask airway, laryngoscopy, catecholamines, haemodynamics