

Comparison of Hemodynamic Responses and Upper Airway Morbidity Following Orotracheal Intubation in Hypertensive Patients - Macintosh Direct Laryngoscope Versus Glidescope Videolaryngoscope

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Background: Laryngoscopy and tracheal intubation is associated with a hemodynamic response caused by sympathetic reflex provoked by stimulation of orolaryngopharynx and is more pronounced & unpredictable in hypertensive patients due to increased activity of sympathetic nervous system. Various techniques and drugs have been used to reduce the pressor response with variable success. Glidescope®videolaryngoscope(GVL) is a video intubation system with 60° angle blade that provides excellent laryngeal view, does not require alignment of oral, pharyngeal and laryngeal axes for visualization of glottis thus, causing less stimulation of orolaryngopharynx. The aim of this study was to compare hemodynamic responses (Blood pressure and heart rate) and airway morbidity using the Macintosh direct laryngoscope(MDL) and the Glidescope® videolaryngoscope.

Methods: Fifty hypertensive patients controlled on antihypertensive medications scheduled for elective surgery under general anaesthesia were randomly assigned to one of the two groups group GVL(n=25) or group MDL(n=25). All patients were induced with a standard anesthetic regimen and all the tracheal intubations were performed by experienced anesthesiologists skilled in the use of both intubation techniques . Heart rate(HR), Systolic blood pressure (SBP), Diastolic blood pressure(DBP), Mean blood pressure (MBP) were recorded at baseline, after induction, pre intubation, at intubation, 1, 2, 3, 4 and 5 min after intubation. Time to intubation, number of attempts, complications during intubation and postoperative airway complications (sore throat, hoarseness, dysphagia, and cough) assessed 24 h after the surgery were also recorded.

Results: There was a statistically significant increase in SBP, DBP and MBP at intubation ((P=0.003, 0.013, 0.03), 1 min (P=0.001, 0.012, 0.02), 2 min (P=0.04, 0.02, 0.04) and 3 min (P=0.02, 0.01) in the MDL group as compared to GVL group. There was no significant difference in HR between two groups at all time points. The time to intubate was significantly greater in the GVL group as compared to MDL group (P=0.0006). There was no significant difference in the incidence of intraoperative and postoperative complications between the two groups except for dysphagia which was more in GVL group as compared to MDL group.

Conclusion: In the hands of an experienced anaesthesiologist,,the use of Glidescope® Videolaryngoscope in controlled hypertensive patients is associated with less hemodynamic response as compared to Macintosh Laryngoscope despite the longer intubation time required with Glidescope® Videolaryngoscope.