

SUMMARY

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Pressor effects of laryngoscopy and tracheal intubation (TI) are due to reflex sympatho-adrenal discharge provoked by epiglottic and laryngotracheal stimulation subsequent to laryngoscopy and TI, which results in hypertension, tachycardia, arrhythmia and a change in plasma catecholamine concentrations leading to a decrease in the left ventricular ejection fraction (stroke volume/end-diastolic volume) and ST-segment changes that indicate myocardial ischaemia. These responses can be problematic to patients suffering from cardio-vascular, cerebro-vascular or abdomino-vascular disease in which hypertension can lead to haemorrhage.

Sympathetic stimulation from TI also increases the IOP which can be harmful in patients with intracranial mass lesions or increased ICP from other pathology, and increases IOP which is dangerous in patients with impending perforation of eye, perforating eye injuries and glaucoma. Control of IOP during ophthalmic surgery or diagnostic tonometry is clinically important, because airway manipulation may worsen ocular morbidity or produce misleading results.

Many attempts have been made to attenuate the pressor effects of laryngoscopy and TI including drugs as: General anaesthetics like: (IV thiopentone, propofol, N₂O inhalation in oxygen and N₂O inhalation with propofol infusion), local anaesthetics like: (IV, nebulized and tracheal lidocaine and nebulized bupivacaine), IV opioids like: (fentanyl, alfentanil, sufentanil, remifentanyl, buprenorphine and tramadol), selective β -1 adrenoceptor blockers like: (IV esmolol), calcium channel blockers like: (sublingual nifedipine, IV verapamil and IV diltiazem), α -2 adrenoceptor agonists like: (oral and IV clonidine and IV

dexmedetomidine) and vasodilators like: (IV sodium nitroprusside, IV, topical and intranasal nitroglycerin and isosorbide dinitrate aerosol into the buccal mucosa)

The pressor response to fiberoptic orotracheal intubation is similar to orotracheal intubation facilitated by the Macintosh laryngoscope blade.

The intubating stylet is used during rapid sequence intubations or whenever the haemodynamically stressful time of laryngoscopy is best minimized (e.g., cardiac anaesthesia or neuroanaesthesia).

Lightwand intubation, which does not require a laryngoscope to elevate the epiglottis, has shown faster times to intubation, fewer intubation attempts and less trauma than direct laryngoscopy, and significantly attenuates the pressor response to TI in normotensive patients and also during awake TI. LW intubation is more effective than fiberoptic intubation in attenuating the pressor response to TI in normotensive elderly patients, however, in hypertensive elderly patients; there is no difference between the two techniques. Both devices are useful for intubation in hypertensive elderly patients because the RPP is maintained within acceptable limits with both devices.

The LMA offers a safer and more effective option than TI because it rarely requires direct laryngoscopy, clearly decreasing this type of trauma and it is one major reason for the observed attenuated pressor responses to LMA. The ILMA attenuates the haemodynamic stress response to TI compared with the Macintosh laryngoscope.

The cuffed oropharyngeal airway (COPA) causes less pharyngeal trauma than the LMA and is associated with smaller cardiovascular changes after airway insertion compared with the LMA.

Superior laryngeal n. and glossopharyngeal n. blocks are also effective methods in blunting adverse haemodynamic responses. Superior laryngeal n. block is appropriate for patient requiring TI before anaesthetic induction and glossopharyngeal n. block can be used in patients who need atraumatic, sedated, spontaneous / ventilating, "awake" TI.