

A Clinical Comparison of Disposable Airway Devices

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The re-usable Classic laryngeal mask airway (LMA®) is widely used. There are concerns regarding the transmission of pathogens. Disposable masks provide a cost-effective alternative. We performed a side-by-side clinical comparison of these devices applicable to the South African context.

Methods

Adult ASA 1-3 patients (30-100 kg) presenting for elective peripheral surgery in Tygerberg Hospital were randomized by drawing of sealed envelopes, to receive the gold standard Classic LMA, or one of 4 disposable devices. They all received a standardized anaesthetic with propofol, fentanyl and isoflurane in 40% O₂/N₂O. Insertion technique, mask sizes and maximum cuff volumes were per manufacturers instructions. The cuff was inflated to achieve an adequate airway seal (no audible leak at an airway pressure of 20cmH₂O), or to the maximum recommended volume. Cuff and airway pressures were measured continuously. A protocol was followed for repeated or failed attempts.

Results

To date, 29 of the proposed 130 patients were recruited. Data was analysed using one-way ANOVA.

The patients were of comparable age, weight, ASA grade and airway grading.

There were no statistical differences in the number of size changes (p=0.508), ease of insertion (p=0.152), insertion time (p=0.908) or insertion attempts (p=0.127). Cuff volumes (p=0.206) and cuff pressure (p=0.083) were similar. Airway trauma as graded by visible blood on the device was low, and similar between groups (p=0.688). There was no difference in the amount of suctioning required (p=0.237). Patient comfort was exceptional and comparable, achieving similar visual analogue scores for sore throat (p=0.875), dysphagia (p=0.846) and hoarseness (p=0.364). No complications were noted.

We found no difference in clinical practice between the Classic LMA®, Disposable LMA®, CobraPLA™, Portex Soft Seal Laryngeal Mask (PLA) and Ambu mask in terms of ease of insertion, patient comfort, airway trauma or adequacy of airway seal.

This is an ongoing study. Updated results will be presented.