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Airway control with supraglottic airway devices on manikins while using chemical personal protective equipment

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Background & Aim: Endotracheal intubation is known to be prolonged by wearing Chemical Personal Protective Equipment (C-PPE). Aim of this study is to evaluate the efficiency of airway control by using 2nd generation supraglottic airway devices (SAD) as compared with endotracheal intubation wearing C-PPE.

Methods: This trial involved 117 medical practitioners from five groups: medics, paramedics, general practitioners, residents and anesthesiologists in the reserve army. Four devices were examined: Endotracheal tube with direct laryngoscopy; 1st generation laryngeal mask airway Unique (Figure-1) and two of the 2nd generation SAD; the laryngeal tube suction disposable (Figure-2) and laryngeal mask airway supreme (Figure-3). Each subject practiced each of the four study devices on a simulator for six times: Three times while wearing C-PPE and three times wearing standard uniform. Primary measures were success or failure to achieve airway control, number of attempts to achieve airway control and time to insertion. Secondary endpoint was a subjective assessment.

Result: More attempts were required to airway control with ETT compared with any other devices, with and without C-PPE ($p < 0.001$). Airway control with ETI was 88% longer than the time required other devices. No statistically difference was noted when comparing the different SAD's. For all devices, the mean times to achieve an airway were longer when operators were equipped with C-PPE as compared with standard uniform (Table-1). Subjectively, difficulty levels were significantly higher for ETI than for all other devices ($p < 0.0001$).

Conclusion: Using second generation SADs significantly shortens the time for airway control while wearing C-PPE compared with ETI.

Biography

Mostafa Somri is the Professor and Director of Anesthesia Department in Bnai Zion Medical Centre, Israel. His research includes anesthesiology, trauma mass casualties, incidents, ICU, emergency, etc.

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