

Airway management during cardiac arrest: A retrospective audit

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Airway intervention is an integral part of cardiac arrest management and may affect patient outcome. Our aim is to assess the efficacy of advanced airway management during cardiac arrest and improve patient outcome as per resuscitation guidelines.

This was retrospective assessment of In-Hospital Cardiac Arrest (IHCA) over one year period in an acute general hospital. We included patients with witnessed cardiac arrest requiring cardio pulmonary resuscitation(CPR). We excluded the patients who had peri-arrest but no CPR required and with confirmed do-not-resuscitate status. Data was collected from resuscitation charts and digital portals.

A total of 145 records were reviewed, out of which 113 were taken into consideration due to improper documentation. Mean age of patients was 71.39 years. Pulseless electrical activity was most common (61.9%) presenting rhythm while asystole and ventricular fibrillation/tachycardia noted in 28.4% and 7.3% patients respectively. Nearly 52% had hypoxia as possible reversible cause. Airway was secured in 54% with I-gel while 30% were intubated as first rescue measure and remaining managed with bag-mask ventilation. The mean time for first airway insertion from the start of cardiac arrest was 3.47 minutes. The airway was switched to endotracheal tube in majority (90%) of the patients. End-tidal carbon dioxide(ETCO₂) was used in only one-third of patient during CPR. Airway management has been emphasized as crucial to effective resuscitation of patients in cardiac arrest. However, recent research has shown that coronary and cerebral perfusion should be prioritized rather than airway management. Endotracheal intubation has been deemphasized. This article reviews the current state of the literature regarding airway management of the patient in cardiac arrest.

In conclusion, mean airway insertion time was relatively quick depicting swift mobilization and organisation during IHCA. I-gel was used as first line airway adjuvant in majority of IHCA. ETCO₂ was infrequently used, which should be regularly used to assess quality of CPR.

After cardiac arrest a combination of basic and advanced airway and ventilation techniques are used during cardiopulmonary

resuscitation (CPR) and after a return of spontaneous circulation (ROSC).

The optimal combination of airway techniques, oxygenation and ventilation is uncertain. Current guidelines are based predominantly on evidence from observational studies and expert consensus; recent and ongoing randomised controlled trials should provide further information. This narrative review describes the current evidence, including the relative roles of basic and advanced (supraglottic airways and tracheal intubation) airways, oxygenation and ventilation targets during CPR and after ROSC in adults. Current evidence supports a stepwise approach to airway management based on patient factors, rescuer skills and the stage of resuscitation. During CPR, rescuers should provide the maximum feasible inspired oxygen and use waveform capnography once an advanced airway is in place. After ROSC, rescuers should titrate inspired oxygen and ventilation to achieve normal oxygen and carbon dioxide targets. Mask ventilation predisposes to hypoventilation and aspiration pneumonitis. Endotracheal intubation by direct laryngoscopy is the preferred method of maintaining airway patency for CPR. Alternative techniques for airway management include endotracheal intubation by lighted stylet, esophageal tracheal Combitube, laryngeal mask airway, and transtracheal ventilation. These methods are recommended by the American Heart Association and the American Society of Anesthesiologists. They have been approved by the Food and Drug Administration for maintenance of airway patency; they are easy to learn, effective, and applicable to CPR. Advantages and disadvantages of each technique may indicate or contraindicate one method over another in specific circumstances.

When CPR is compromised by airway obstruction that remains unresponsive to traditional techniques, using alternative methods is appropriate. The techniques selected must be based on individual familiarity and expertise. CPR (cardiopulmonary resuscitation), ETC (esophageal tracheal Combitube), HIV (human immunodeficiency virus), LMA (laryngeal mask airway), PTL (pharyngotracheal lumen airway)

Note: This work is partly presented at International Conference on Critical care and Emergency Medicine (December 14-15, 2020 | Dubai, UAE)