

Importance of Capnography Monitoring in Critical Ill Patients

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Endotracheal intubation (EI) is the most commonly performed in the intensive care unit but has the potential to lead to critical complications [1]. Hence, the use of fluid loading, preoxygenation with noninvasive positive pressure ventilation, rapid sequence induction or capnography monitoring is recommended to make EI safer [2].

In this topic of The Korean Journal of Critical Care Medicine, Yoon et al. [3] reported a case “Endotracheal Tube Completely Severed by a Patient Bite and Lodged in the Right Main Bronchus.” In that case, the authors had difficulty inserting a suction catheter into the endotracheal tube (ETT) and after 30 minutes, they observed ETT damage caused by increased peak airway pressure, lower tidal volumes and reduced oxygen saturation. If the patient had been monitored using a capnography, such problems could have been detected sooner.

According to a human cadaveric study, capnography is highly accurate in detecting a correct ETT placement showing 100% sensitivity and 100% specificity with the ability to provide highly reliable readings in low-perfusion states (cardiac arrest). Capnographic monitoring is therefore recommended as a gold standard for patients undergoing endotracheal intubation [4].

Capnography provides critical physiologic data regarding ventilation and perfusion matching in the lung, heart and metabolic rate [5]. In addition, it provides valuable patient safety information that can be used for a variety of clinical decisions, including the prediction of acute respiratory distress syndrome gradient [6], determination of outcome after cardiopulmonary resuscitation [7] and decision about esophageal intubation, unexpected extubation, disconnection of breathing circuit, the mechanical state of the lung. Therefore, the capacity of capnography can be aggressively used for monitoring critically ill patients.

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