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Mechanical ventilatory support is one of the major supportive modalities used in anesthesia and critical care. An essential element of cardiopulmonary resuscitation, it can be life saving during a variety of acute and chronic diseases, when respiratory drive is depressed, or when the patient lacks the neuromuscular ability to breathe.

Further, the lung is usually one of the major organs involved in multiorgan failure. Thus, delivering appropriate ventilatory care can be challenging and may influence patient outcome ***(Stusky, 1993).***

Several modes of ventilation are now available which allows adjustment of artificial ventilation according to the patient's requirement. These modes progressed recently to give the maximum benefits with minimal complications. The advances in our understanding of the pathophysiology and mechanics of respiratory system led to new therapeutic modalities and help to tailor the mode used for ventilation according to the patient's need ***(Rappaport et al., 1994).***

Current ventilatory support ranges from controlled mechanical ventilation (no opportunity for the patient to breathe spontaneously) to total spontaneous ventilation with CPAP for support of oxygenation and the elastic work of breathing. Partial ventilatory support bridges the gap

for patients who are able to provide some ventilation but can not entirely support their own alveolar ventilation.

Proper artificial ventilation will provide maintenance of the vital processes, blood gases, tissue oxygenation and metabolism and will allow stability of the patient's general condition to treat the original cause of this respiratory imbalance ***(Robert and Robert, 1994).***

Since the anesthesiologist is the person that manage artificial ventilation for patients in the ICU, in addition to mechanical ventilation of the lungs to patients during anesthesia; details of all aspects of this technique should be a basic knowledge for the anesthetist. This essay has been suggested to review the subject of artificial ventilation of the lungs and role of the anesthetist in patient management.