



Comparison between Balloon Blowing Exercise and Incentive Spirometry in Patients with Chest Intubation after Trauma

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Trauma is the third leading cause of death in United States and also the leading cause of death in under the age of 40. Men are more commonly injured as compare to women [1]. Blunt trauma is more common type of chest trauma as compare to penetrating trauma [2]. Chest trauma is a major source of morbidity and mortality. A severe chest injury can affect all of the organs of chest cavity. These components like skeleton (ribs, collarbone, shoulder, and sternum) and the lung and pleura, bronchial tree on the respiratory tract, esophagus and blood vessels of the chest and heart, and diaphragm are included. Frequency Chest trauma injuries estimates 12 per million people per day are found. Approximately 33% of these injuries require hospitalization. Overall, severe chest injuries in 20-25% of all deaths are directly responsible for, and chest trauma is a major contributor to mortality, others 50%.

A retrospective study analysis was done on 515 cases of chest trauma injury. They found that thoracic morbidity rate was 36% and mortality rate was 15.5%. Majority of the patients with blunt trauma had a lot of other injuries along with chest trauma. In this study only 84 patients had isolated thoracic injuries and 431 patients had multi trauma injuries with chest trauma. In all, 287 patients who had hemothorax, pneumothorax (unilaterally and bilaterally) and their combined complications developed like pulmonary contusions, cardiac contusions, ruptured diaphragms, ruptured aortas, cardiac rupture, thoraceobronchial injury, pulmonary vessels and great vessels injury. Morbidity was mainly due to atelectasis then pneumonia, acute respiratory distress syndrome, emphysema, recurrent pneumothorax and aspiration. Mortality rate is due to late arrival of patients to hospital with no vital sign or cardiac arrest and also due to acute respiratory distress syndrome developed after 72 hours of hospitalization [3].

Another study was conducted to quantitatively assess the efficacy of incentive spirometry (IS), intermittent positive pressure breathing

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oxygen in order to meet patient's body needs. Lung like muscles can

