Abstract

Objective: to evaluate mechanically ventilated patients focusing on epidemiological characteristics, ventilator modes, common settings used, length of ICU stay, duration of ventilation, weaning, complications and in hospital mortality.

Methods: a retrospective cohort study involved 1081 patients admitted to critical care department, Cairo University and connected to mechanical ventilation in the period between January 2010 and December 2014.

Results: median age was 55 years and 53% were females. Causes of ventilation were cardiac 41%, respiratory 31.9%, CNS 16.9% and sepsis and septic shock 9.4%. The most common mode of MV was VCV (61.8%) followed by NICPAP (15.4%), PCV (14.7%), PS-CPAP (8%) and BIPAP (0.1%). Highest PEEP was recorded in ARDS patients (8.22 ± 4.19cmH2o). Also the highest PEEP (Mean 5.15 ± 1.82 cmH20) in patients ventilated for respiratory problems and lowest (3.53±1.24) in sepsis and septic shock patients. Tidal volume was highest in patients ventilated for cardiac diseases (447.2±72.9 ml) and lowest in CNS causes (416.9 ± 88.4 ml). 20% of our patients were put on non-invasive mechanical ventilation .Weaning trials were done in 401 patients (37.1%), of which 68.8% were successfully weaned and 31.2% patients failed to be weaned. Duration of ventilation was 6.70 ± 10.98 days with median 3 days while Length of stay was 13.28 ± 15.25 days with median 8 days. There was a significant increase in duration of ventilation in patients ventilated with invasive mode (7.7 ± 11.5 days) compared to (4.6 ±7.9 days) for non-invasive mode. Complications of ventilation were VAP 14.8%, barotrauma 6.1%, cardiopulmonary arrest 2.8% and tracheo-oesophageal fistula 0.1%. tracheostomy was done in 7% of patients.. Mortality rate was 64.4% and was higher in patients with cardiac diseases 41.8% patients on VCV mode 77.5%, those with higher tidal volumes, higher FIO2 and lower PEEP levels. Also mortality rate was higher in invasive ventilation 72.2%.

Conclusion: Survival among mechanically ventilated patients depends not only on the factors present at the start of ventilation, but also on patient management, ventilator settings used and the development of complications in ICU.

Key Words:

(Mechanical ventilation, PEEP, mortality, outcome, weaning).