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THE IMPLEMENTATION OF AN INDIVIDUALISED CONTINUOUS POSITIVE AIRWAY PRESSURE PROGRAMME IN PREPARATION OF THE INTUBATED ADULT PATIENT FOR EXTUBATION

Wilma Erasmus.

Background
Lifesaving mechanical ventilation (MV) has the potential to cause life-threatening complications such as ventilator induced diaphragmatic dysfunction, with the associated risk of increased mortality. Weaning strategies that provide insufficient respiratory work or insufficient respiratory muscle rest may lead to respiratory muscle fatigue and consequently failed weaning and extubation.

Aim
An experimental, prospective, non-randomised, sequential study was conducted to determine the effect of an individualised CPAP programme during stage 3 of MV (spontaneous breathing stage) on the weaning outcomes of adult patients, aged 18-60 years, who were mechanically ventilated for longer than 48 hours.

Method
Forty eight subjects, in an open adult, general intensive care unit (ICU) were recruited. The weaning programme used for the intervention group (n=24), was developed utilising three principles of muscle rehabilitation namely; daily stepwise progression, sufficient rest and recovery periods and was adapted to the individual needs and progression of each subject. The weaning outcomes were compared to that of the control group (n=24) who were weaned according to the standard weaning programme of the ICU.

Results and Discussion
The differences in time that subjects spent in stage 2 MV and total time of MV were not statistically significant: [Stage 2 (weaning stage) $p = 0.83$ and total time on MV $p= 0.75$]. The difference in time spent in stage 3 was statistically significant ($p = 0.01$). The difference in failure rate to sustain spontaneous breathing between the two groups ($p = 0.01$) and mortality rate ($p =0.02$) were statistically significant. The rate of successful extubation was not statistically significant ($p = 0.52$).

Conclusion
Results from this study showed that the implementation of an individualised CPAP programme during the spontaneous breathing stage of MV may improve the outcomes of extubation in adult ventilated patients.