

disorders or for the prognosis of these patients is not completely understood.

Method We prospectively evaluated 213 patients admitted to a general ICU from April 2002 to August 2002. We measured the maximal inspiratory pressure and maximal expiratory pressure (the best of three measurements), tidal volume (ml), respiratory frequency, body mass index, age, gender, hospital admission time and mortality.

Results The measurements at ICU admission were: mean inspiratory pressure, 42.32 ± 19.92 mmHg (-12 to 120 mmHg); mean expiratory pressure, 43.66 ± 20.72 mmHg (0–120 mmHg); mean tidal volume, 460 ± 146 ml (100–1000 ml); respiratory frequency, 20 ± 6 (10–49); body mass index, 22.19 ± 4.94 (12.7–43.83); mean age, 61.78 ± 18.52 years (19–94 years); females, 81; males, 130.

Lower maximal inspiratory pressure, lower tidal volume and higher age are values were correlated with higher patient in-hospital mortality.

Conclusion The measurement of maximal inspiratory pressure at ICU admission can be a useful parameter to predict in-hospital mortality. Possible interventions such as better muscle evaluation, respiratory physiotherapy and muscle training programmes should be studied in the future.

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P55 Assessment of cardiorespiratory changes in critically ill patients in two methods employed for mechanical ventilation weaning

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Objectives To analyze gas exchange, respiratory mechanics and cardiovascular monitoring parameters during mechanical ventilation weaning, using pressure support ventilation (PSV) and T-piece techniques, and to compare these variables in subgroups of patients with heart disease (HD) or nonheart disease (NHD).

Materials and methods A randomized crossover clinical trial comparing PSV and T-piece techniques was performed. Twenty patients, aged 57 ± 15 years, 13 (65%) male and seven (35%) female, who were on mechanical ventilation for a period ranging from 2 to 54 days were studied. The following were analyzed: peripheral oxygen saturation (SaO_2), partial carbon dioxide pressure in the exhaled air (PetCO_2), respiratory rate, tidal volume (V_T), minute ventilation (V_E), heart rate (HR), systolic blood pressure (SBP), diastolic blood pressure (DBP), mean blood pressure (MBP), changes in ST segment and presence of arrhythmia at the electrocardiographic evaluation. Data were recorded at times 0, 15 and 30 min after the start of the randomized weaning technique, with a 30 min resting interval before starting the second technique. Patients were also grouped as having HD ($n=11$) and NHD ($n=9$), and compared relative to cardiovascular parameters.

Results The comparison between PSV and T-piece techniques demonstrated that total SaO_2 and PetCO_2 were significantly higher during PSV, at all times ($P<0.001$ and $P<0.05$). As for respiratory

rate, it was reduced when subjected to PSV at times 0 and 15 min ($P<0.05$). V_E and V_T were significantly increased while at PSV, at all three times ($P<0.001$). There were no differences between the PSV and T-piece techniques for the values of MBP, SBP, DBP and HR. The comparison between PSV and T-piece techniques in patients with HD and NHD has shown that total HR values in patients with HD were significantly lower at time 30 min in PSV ($P<0.05$), with no significant difference in the other measurements. The HR was greater in NHD patients, both during PSV and T-piece ($P<0.05$). When comparing patients with HD ($n=11$) versus NHD patients ($n=9$), ST segment changes were observed more often in those with HD (64%) than in NHD patients (11%) ($P<0.05$). Arrhythmia occurred in 27% of the patients with HD and in 11% of those with NHD; sinus tachycardia was observed only in NHD patients, in five (56%) of them ($P<0.01$).

Conclusions When comparing PSV and T-piece techniques, the measurements of respiratory parameters and oxygenation displayed better results with the use of PSV. There were no significant differences in the measurements of cardiovascular and EKG parameters. When patients with HD and NHD were compared, a reduction in HR at 30 min on PSV was observed only in those with HD. Also, a greater number of ST segment changes, a smaller occurrence of sinus tachycardia and a trend toward a greater occurrence of arrhythmia in patients with heart disease were observed in both weaning modes.

P56 Heart rate variability in chronic obstructive pulmonary disease patients during bilevel positive airway pressure

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Objectives Ventilation by bilevel positive airway pressure (BIPAP) was applied in chronic obstructive pulmonary disease

(COPD) with the aim of increasing oxygenation, and reducing dyspnea and respiratory work. However, the positive pressure