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PREDICTING SUCCESS IN WEANING FROM MECHANICAL VENTILATION: INITIAL RESULTS FROM A MULTICENTRIC STUDY

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INTRODUCTION. Failure in weaning from mechanical ventilation (MV) is frequent (25-30%) and associated with high mortality. Indexes predicting success can be helpful clinically. However their predictive capacity can be low. The goal from this study is to evaluate weaning predictor indexes in patients during weaning from MV.

METHODS. Patients under MV for at least 48 hours, submitted to spontaneous breathing trial (SBT) for 30 min, extubated according to assistant physicians decision and followed for 48 hours, were included. They were evaluated concerning age, sex, clinical characteristics, length of hospital and ICU stay, time of MV. At first and 30th minutes from SBT there were analyzed: arterial blood gases, hemodynamic parameters, respiratory parameters as respiratory rate (RR), tidal volume (VT), rapid shallow breathing index (fVT), maximal inspiratory and expiratory pressures. Comparisons were done between two groups of patients: success versus failure, defining failure as return to MV in the first 48 hours.

RESULTS. 294 patients were studied. Overall mortality rate was 15%. Return to mechanical ventilation occurred in 25%. The most important differences comparing success with failure groups were: lower age (57 ± 19 X 63 ± 17 years, $p < 0.05$), lower mortality rate (9% X 32%, $p < 0.001$), shorter length of ICU stay (14 ± 11 X 20 ± 15 days, $p < 0.001$); less incidence of dyspnea (32% X 54%, $p < 0.001$), higher oxygen saturation at 30th min ($96 \pm 3\%$ X $94 \pm 4\%$, $p < 0.01$), lower RR at first and 30th min (24 ± 6 X 26 ± 6 bpm, $p < 0.05$, and 24 ± 6 X 28 ± 8 bpm, $p < 0.001$), higher VT at 30th min (510 ± 160 X 440 ± 170 ml, $p < 0.01$), lower fVT at first and principally in the 30th min (57 ± 27 X 65 ± 30 , $p < 0.05$ and 55 ± 33 X 80 ± 56 , $p < 0.001$).

CONCLUSION. In this group of patients a great number failed in the weaning process showing, as expected, a higher mortality rate. Parameters related to failure were higher age, longer ICU stay, higher incidence of dyspnea, higher RR and fVT at the beginning and, principally, the end of the trial, lower VT and oxygenation at the end of the trial.

Other members from the study: LGBorges, FCallefe, KBPinto, KHartmann, CEHahn, LCassel, MB-Blom, RZancanaro, PPinheiro, RCremonesi, TFTonietto, ES Oliveira, JBHervé, SFMBrodth, FAlves, MEAlves, ACTSilva, RCondesa, JHorer, NBSilva.