**Outcome scores**

**A531 - Five-year impact of icu-acquired neuromuscular complications: a prospective, observational study**

N Van Aerde 1; P Meersseman 2; Y Debeayve 1; A Wilmer 1; J Gunst 1; MP Casaer 1; F Bruyninckx 3; R Gosselink 4; G Van den Berghe 1; G Hermans 1

1KU Leuven, Department of Cellular and Molecular Medicine, Leuven, Belgium, 2KU Leuven, Medical Intensive Care Unit, Leuven, Belgium, 3UZ Leuven, Department of Physical Medicine and Rehabilitation, Leuven, Belgium, 4KU Leuven, Department of Rehabilitation Sciences, Leuven, Belgium

Introduction:
We assessed the independent association of ICU-acquired neuromuscular dysfunction with 5-year mortality and morbidity. We explored the optimal threshold of the Medical-Research-Council (MRC) sum-score predicting 5-year outcome.

Methods:
Prospective, 5-year follow-up study of 883 EPaNIC patients (Clinicaltrials.gov:NCT00512122), systematically screened in-ICU for strength with MRC (‘MRC-cohort’, N=600), for electrophysiology changes with compound muscle action potential on day 8±1 (‘CMAP-cohort’, N=689), or both (‘MRC&CMAP-cohort’, N=415). Associations of MRC close to ICU discharge and abnormal CMAP on day 8±1 with 5-year mortality, hand-grip-strength (HGF, %pred), six-minute-walk-distance (6-MWD, %pred), and physical function of the SF-36 quality-of-life questionnaire (PF SF-36) at 5-year follow-up were assessed with adjusted Cox proportional hazards and linear regression. The optimal threshold for MRC close to ICU-discharge predicting adverse 5-year outcome was derived from Local-regrESSion lines on residual- and scatterplots.

Results:
Lower MRC [HR, per-point-increase:0.946 (95%CI:0.928-0.968), p=0.001] and abnormal CMAP [HR:1.568 (95%CI:1.165-2.186), p=0.004] independently associated with 5-year mortality in respective cohorts. In the MRC&CMAP-cohort, only lower MRC [HR:0.956 (95%CI:0.934-0.980), p=0.001] independently associated with 5-year mortality. Among 205 5-year survivors, only lower MRC independently associated with low HGF [0.866 (95%CI:0.237-1.527), p=0.004], low 6-MWD [105.1 (95%CI:12.1-212.9), p=0.043], and low PF-SF-36 [-0.119 (95%CI:-0.186 to -0.057), p=0.002]. MRC≤55 best predicted poor 5-year outcome. Both MRC≤55 and abnormal CMAP independently associated with 5-year mortality.

Conclusion:
ICU-acquired neuromuscular complications may impact 5-year morbidity and mortality. MRC if slightly reduced, may affect long-term mortality, strength, functional capacity and physical function, whereas abnormal CMAP only related to long-term mortality.