Abstract: **P299**

**Prognostic value of handgrip strength in patients with heart failure**

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Background. Handgrip strength is used to estimate overall muscle strength. The impact of handgrip strength on prognosis of heart failure is unclear.
Purpose. We evaluated the impact of handgrip strength on hospitalisation rate and survival of patients with heart failure.
Methods. We retrospectively collected data of consequent patients with heart failure from outpatient heart failure clinic. We measured handgrip strength at every visit at the clinic. Study endpoints were all-cause hospitalisation or death and hospitalisation or death because of heart failure. We recorded the first and the last handgrip before endpoint event. We evaluated the impact of handgrip strength on hospitalisation rate and survival with Cox proportional hazards analysis.
We used the last measured handgrip to define frailty (standardised tables which consider age and body mass index). We divided patients into frail and non-frail groups and compared survival of these groups with Kaplan-Meier analysis.
Results. Out of 215 patients, 73 (34%) were hospitalised or died from any cause and 35 (16%) were hospitalised or died due to heart failure. Patients who reached the endpoint were older, had a higher level of troponin T, a higher percentage of them had arterial hypertension, patients who were hospitalised or died from any cause had higher level of NT-proBNP than non-hospitalised patients. No other significant differences were found between groups in clinical characteristics, comorbidities and laboratory parameters.
Handgrip strength was a statistically important negative prognostic factor of hospitalisation rate and survival in all-cause and heart failure group (Exp(B)=0.958, 95%CI 0.932-0.986, p=0.003 and Exp(B)=0.929, 95%CI 0.889-0.973, p=0.002, respectively). When adding age, type of heart failure and stage of chronic kidney disease as prognostic co-factors, stage of chronic kidney disease showed to be a significant prognostic co-factor besides handgrip in all-cause hospitalisation rate and survival.
Patients in the frail group (N=176) had a significantly lower all-cause heart failure survival than the non-frail (N=39) group (14.5±0.8 vs. 18.3±1.3 months, p=0.018 and 17.6±0.9 vs. 20.6±1.0 months, p=0.031, respectively).
Conclusions. Handgrip strength can be used as a prognostic factor in heart failure patients - lower handgrip correlates with more hospitalisation and higher mortality (all-cause and heart failure related).