Abstract No. **36**
Category: **Heart Failure and Cardiomyopathies**
Title: **Hyperkalemia is independently associated with adverse clinical events in heart failure and adds predictive power to established prognostic markers**
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Abstract:

INTRODUCTION: Compelling evidence indicates that hyperkalemia may play a role to identify heart failure (HF) individuals at a higher risk to develop major cardiovascular events (MACE), even after adjusting for multiple covariates such as chronic kidney disease and use of ARBs, ACEi and aldosterone receptor blockers. Besides that, there is no published data that evaluated the incremental impact of hyperkalemia on top of MAGGIC (Meta-Analysis Global Group in Chronic Heart Failure) score.

PURPOSE: Our aim was to investigate weather high serum potassium levels predicts MACE. We further aim to examine whether levels of potassium would provide complementary prognostic data beyond classical clinical variables and the MAGGIC score.

METHODS: One hundred and seventy individuals (52±11, 61% male) with HF and decreased ejection fraction (mean LVEF 39±15) were recruited from a tertiary HF program (from 2014-2018). Hyperkalemia was defined as a serum potassium level ?5.0mmol/L. Multivariate Cox regressions were used to estimate the association with MACE defined as CV death and hospitalizations due to HF. Adjusted-area under the curve (AUC) in ROC curve analyses was used evaluate incremental risk prediction and compared using "c"-statistics.

RESULTS: Seventeen events (5 CV deaths and 12 hospitalizations due to HF) were identified during a median follow-up of 512 days. Stratified by the 50th percentile of potassium levels, baseline demographics, LV remodeling parameters and medications were not different among groups (all p=NS). Both dichotomized (?5.0 mmol/L, 75th percentile) and continuous potassium levels were associated with MACE (respectively, hazard ratio[HR] of 3.2 [95% confidence interval[CI]: 1.3-8.2] and HR per 1mmol/L increase in k of 5.7 [95%CI: 1.8-18] p=0.003) in Cox-regressions adjusted for MAGGIC score. In stepwise Cox regressions, only serum potassium, maximal distance at the 6-minute walking test (6-Mindistance) and MAGGIC score were independently associated with MACE. ROC-AUC adjusted to Chagas etiology and atrial fibrillation for combined MAGGIC score and serum potassium was statistically superior to MAGGIC score alone and serum potassium alone (respectively, 0.69[0.57-0.81] vs. 0.63[0.50-0.78, p=0.018). 6-Mindistance did not add predictive power to MAGGIC score in ROC-AUC.

CONCLUSION: Hyperkalemia was independently associated with an increased risk of MACE, and it adds predictive power to MAGGIC score in our Brazilian HF individuals.