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The need of developing selective prediction models in elderly patients with heart failure

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Running head: Biomarkers of heart failure in elderly.

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It is with great interest that we have read the article by Özlek and co-workers [1], who performed a post-hoc analysis of results from the APOLLON trial (A comPrehensive, ObserationaL registry of heart faiLure with mid-range and preserved ejection fractiON). The authors investigated in a real-world study (patients included in a registry) the effects of treatment of octogenarian individuals with heart failure (HF) with mid-range and preserved ejection fraction, and then, the authors compared the observation in elderly to younger subjects. Interestingly, the authors reported that elderly patients with HF were similarly treated as compared to younger patients (in terms of ACE-Is/ARBs, β-blockers, MRAs, digoxin, ivabradine and diuretics), thus suggesting adherence to guideline recommendations independently of the age of subjects. A previously published narrative review from our research group explored the potential predictive role of biochemical and echocardiographic parameters on prognostic outcomes and hospital readmission, among HF elderly population [2]. As discussed by our article, the authors found a higher prevalence of HF with preserved ejection fraction (HFpEF) among elderly patients, who were more frequently associated to a high economic impact because of repetitive and prolonged hospitalization due to cardiovascular and non-cardiac comorbidities. Particularly, chronic kidney disease, diabetes mellitus and chronic obstructive pulmonary disease were reported. Furthermore, among biochemical parameters, anemia, hyponatraemia and high brain natriuretic peptide levels were able to predict a worse prognostic outcome. On the other hand, echocardiographic parameters of diastolic dysfunction, including a higher left atrial volume index and E/e' ratio, resulted as independent predictors of hospital readmission among HFpEF elderly patients. In conclusion, the study by Özlek and coworkers was able to show and confirm different associations with HF depending on the age of patients. In addition, the results suggested a

potential usefulness of selective biochemical and echocardiographic variables in managing HFpEF in elderly. These biomarkers were shown to potently correlate with poor prognostic outcomes (i.e. increased risk of hospital readmissions), thus suggesting a need of developing specific prediction models to be applied in managing HFpEF in elderly patients.

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