

Abstract Submission No.: A-0244

Steroidal Mineralocorticoid Receptor Antagonist Plus Angiotensin Converting Enzyme-Inhibitor (ACEi) or Angiotensin Receptor Blocker (ARB) Versus Mono-Therapy ACE-i/ARB in Heart Failure Patients: Impact on Hyperkalemia and Acute Kidney Injury

Eduward Thendiono¹, jeane thendiono²

¹Department of Internal Medicine, Bunda Hospital Gorontalo, Indonesia

²Department of Emergency Unit, Bunda Hospital Gorontalo, Indonesia

Objectives : To evaluate the impact of the steroidal mineralocorticoid receptor antagonist (MRA) plus Angiotensin Converting Enzyme Inhibitor (ACEi) or Angiotensin Receptor Blocker (ARB) vs mono-therapy ACEi/ARB in hyperkalemia and acute kidney injury (AKI) in heart failure management.

Methods : This is a retrospective analysis of medical record of one hospital (2019 to 2023). Adult (>18 years old), heart failure diagnosed, received steroidal MRA (spironolactone) plus any ACEi/ARB or single ACEi/ARB at least one month were included in the analysis. Diabetes patient and end-stage renal disease were excluded. The impact of dual-therapy group (spironolactone plus any ACEi/ARB) vs. mono-therapy (ACEi/ARB only) in hyperkalemia and AKI event were estimated as an odd ratio (OR) with 95% confidence interval.

Results : A total of 129 heart failure patients (91 dual-therapy vs. 38 mono-therapy) matched the inclusion. Analysis showed that the event of hyperkalemia was greater in dual-therapy than mono-therapy group (56 vs 3; OR 2.9; 95%CI 1.67-4.18) as well as the event of AKI (47 vs 12; OR 2.31;95%CI 1.04-5.14). Log regression analysis in dual-therapy group showed that the duration of therapy (more than one month) may correlate with increased event of both hyperkalemia (OR 3.23;95%CI 1.26-8.29;p<0.05) and AKI (OR 3.27; 95%CI 1.38-7.76;p<0.05). Low baseline glomerular filtration rate at initiation (15-44 ml/minute/1.73m²) also correlate with increased AKI events (OR 1.18; 95%CI 1.066-1.507) in this group. In mono-therapy group, the duration of therapy may also correlate for increased event of AKI (OR 1.54; 95%CI 1.20-2.64;p<0.05) but not significant for hyperkalemia. Age, and gender did not have significant effects on both hyperkalemia and AKI events in both groups (p>0.05).

Conclusions : Dual therapy (steroidal MRA plus ACEi/ARB) increases the odds of hyperkalemia and AKI events in heart failure management especially if used for a longer duration and patients with low glomerular filtration rate at initiation.