

Comparative Efficacy of Angiotensin Converting Enzymes Inhibitors and Angiotensin Receptor Blockers in Patients with Heart Failure in Tanzania: A Prospective Cohort Study

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Abstract : Background: Heart failure has been a rising concern in Tanzania. New drugs have been introduced, including the group of drugs called Angiotensin receptor Neprilysin Inhibitor (ARNI), but due to their high cost, angiotensin-converting enzymes inhibitors (ACEIs) and Angiotensin receptor blockers (ARBs) have been mostly used in Tanzania. However, according to our knowledge, the efficacy comparison of the two groups is yet to be studied in Tanzania. The aim of this study was to compare the efficacy of ACEIs and ARBs among patients with heart failure. Methodology: This was a hospital-based prospective cohort study done at Jakaya Kikwete Cardiac Institution (JKCI), Tanzania, from June to December 2020. Consecutive enrollment was done until fulfilling the inclusion criteria. Clinical details were measured at baseline. We assessed the relationship between ARBs and ACEIs users with N-terminal pro-brain natriuretic peptide (NT pro-BNP) levels at admission and at 1-month follow-up using a chi-square test. A Kaplan-Meier curve was used to estimate the survival time of the two groups. Results: 155 HF patients were enrolled, with a mean age of 48 years, whereby 52.3% were male, and their mean left ventricular ejection fraction (LVEF) was 37.3%. 52 (33.5%) heart failure patients were on ACEIs, 57 (36.8%) on ARBs, and 46 (29.7%) were neither using ACEIs nor ARBs. At least half of the patients did not receive a guideline-directed medical therapy (GDMT), with only 82 (52.9%) receiving a GDMT. A drop in NT pro-BNP levels was observed during admission and at 1-month follow-up on both groups, from 6389.2 pg/ml to 4000.1 pg/ml for ARB users and 5877.7 pg/ml to 1328.2 pg/ml for the ACEIs users. There was no statistical difference between the two groups when estimated by the Kaplan-Meier curve, though more deaths were observed in those who were neither on ACEIs nor ARBs, with a calculated P value of 0.01. Conclusion: This study demonstrates that ACEIs have more efficacy and overall better clinical outcome than ARBs, but this should be taken under the patient-based case, considering the side effects of ACEIs and patients' adherence.

Keywords : angiotensin converting enzymes inhibitors, angiotensin receptor blockers, guideline direct medical therapy, N-terminal pro-brain natriuretic peptide

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