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Dealing with non-cardiac comorbidities in advanced heart failure patients: The role of β -blockers as adjunct in the conventional therapy in a teaching hospital in Ghana

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Background: Non-cardiac comorbidities are frequent in advanced heart failure patients and are strongly associated with adverse clinical outcomes. Therefore, if these comorbidities are recognized and managed well, although this may complicate conventional treatment, outcomes in these high-risk heart failure patients may be greatly improved

Objective: To assess the impact of non-cardiac comorbidities on survival of advanced heart failure patients using β -blockers as adjunct in the conventional therapy.

Methods Design: Cohort study involving patients with advanced heart failure at the Cardiac Clinic of KATH. All the patients enrolled had Left Ventricular Ejection Fraction (LVEF) of $\leq 30\%$ and were 30 years or above in age. Patients were excluded from the study if they were on β -blocker already.

Patients: The study involved 583 patients with mean age 62 years ± 14.5 SD (95% CI, 60.8-63.2). 312 (54%) were NYHA class III and 271(46%) were NYHA class IV. 51% were females whilst 49% were males. The patients were assigned to Carvedilol, Bisoprolol and Control. Survival from heart failure in the presence non-cardiac comorbidities was the primary end point. Survival was determined based on five (5) non-cardiac comorbidities present i.e. diabetes, chronic kidney disease, hypertension, chronic atrial fibrillation and pneumonia.

Results: 11.5% of the patients had diabetes, 7.4% chronic kidney disease, 4.8% had chronic atrial fibrillation. 14.2% had hypertension, 2.2% had pneumonia and 1.9% were anaemic. Other comorbidities observed in the study were 2.6% renal impairment, 1.1% had stroke, 1.5% and 0.3% had HIV/AIDs and tuberculosis respectively whilst 52.5% of the patients presented with no comorbidity other than their advanced heart failure. The overall mortality rate after 6 months of therapy was 10.6% in the Carvedilol group, 11.5% in the Bisoprolol group and 25.5% in the Control group. Carvedilol reduced mortality from 36.1% at base line to 10.6% (25.5% reduction in death risk). Bisoprolol reduced mortality from 34.0% to 11.5% (23.0% reduction in death risk). With control, mortality reduced from 47.0% to 25.5% (21.5 % reduction in death risk) $p < 0.001$. Survival analysis using log rank test showed that patients on carvedilol had a higher survival rate compared to those on bisoprolol and control.

Conclusion: Reduced mortality and increased survival of the patients with non-cardiac comorbidities were significantly achieved with beta blockers as adjunct to conventional therapy at the cardiac clinic.

Biography

Charles Anane is an alumnus of the Kwame Nkrumah University of Science and Technology, Ghana. He has qualified as a Pharmacist in 1987 and joined the WHO working committee on Inventory Control of Medicines in Government hospitals throughout the country and coordinated the documentation on Inventory Policy of the Ministry of Health. He is a Clinical Pharmacist and currently holds Ph.D. in Clinical Pharmacy. He is a deputy director of pharmaceutical services at the KomfoAnokye Teaching Hospital and a fellow of the Ghana College of Pharmacists. He has published more than 31 scientific papers in reputed international peer-reviewed journals up to date.

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