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Title

Impact of Early Potassium Monitoring and Correction on In-Hospital Outcomes of Patients with Acute Heart Failure

Abstract

Introduction

Electrolyte imbalance, particularly potassium derangement, is a frequent and potentially life-threatening complication in patients admitted with acute heart failure. Both hypokalemia and hyperkalemia increase the risk of arrhythmias, prolonged hospitalization, and mortality. Early identification and timely correction may improve clinical outcomes, especially in resource-limited settings.

Objective

To assess the impact of early potassium monitoring and correction on in-hospital outcomes of patients admitted with acute heart failure.

Methods

This prospective observational study was conducted over five months in the medical wards of a tertiary care hospital. Seventy (70) adult patients (≥ 18 years) admitted with a diagnosis of acute heart failure were consecutively enrolled. Serum potassium levels were measured within the first 6 hours of admission. Patients were managed according to an early correction protocol when potassium levels were abnormal. Outcomes assessed included arrhythmia occurrence, length of hospital stay, ICU admission, and in-hospital mortality.

Results

Potassium abnormalities were identified in 38% of patients at admission. Early correction was associated with a lower incidence of clinically significant arrhythmias (7% vs 21%). Patients receiving early correction had a shorter mean hospital stay (4.2 vs 6.1 days) and fewer ICU admissions (14% vs 29%). Overall in-hospital mortality was 11%, with lower mortality observed in patients whose potassium levels were corrected within 24 hours.

Conclusion

Early potassium monitoring and timely correction in patients with acute heart failure are associated with reduced arrhythmias, shorter hospital stay, and improved in-hospital outcomes. This simple, low-cost intervention can be easily implemented and may significantly improve patient care in routine clinical practice.