

3rd International Conference on Cardiology and Cardiovascular Innovations July 21-22, 2026 | Vienna, Austria



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Improving Door-to-ECG Time in Acute Myocardial Infarction: A Closed-Loop Audit from a Tertiary Care Center in Peshawar

Acute myocardial infarction is the leading cause of heart disease worldwide. Timely diagnosis and management plan is paramount which is pinned on early electrocardiogram to minimize the doorto-electrocardiogram time. Our objective was to evaluate the timing of initial electrocardiogram of patients presenting with acute myocardial infarction at our local cardiac hospital in Pakistan and implement changes with a complete closed loop audit. Retrospective and prospective data of all patients who presented to the emergency room of Peshawar Institute of Cardiology from September 2022 till September 2023 was collected using the hospital management information system and electronic medical record. A total of 149 patients' data was collected and analyzed. The first cycle of the audit analyzed 29 patients, the second cycle of the audit analyzed 60 patients and the third cycle of the audit again analyzed 60 patients. In the first set of patients, it was observed that 17.2 percent of patients had door-to-ECG time of less than 10 minutes which was far from ideal. Therefore to cope with this delay in ECG time it was decided to set up a designated triage for ACS patients within the Emergency department. This was implemented and in the second cycle of the audit 43.3% of patients achieved the said target. During the third cycle when the initial registration and formal paperwork for admission to ER were removed then 75% of patients had their ECG done within 10 minutes of the presentation. This audit successfully identified the modifiable factors responsible for the delay in the first ECG which included a lack of staff, non-viability of triage, and paperwork. After working on these factors our target Door to ECG time of 75% was achieved.

Keywords: Acute myocardial infarction, ECG, Electrocardiogram, STEMI, ST-elevation myocardial infarction, Audit.

Biography

Highly dedicated medical professional with over 6 years of progressive experience in internal medicine, cardiology and acute care. Completed structured FCPS fellowship in both General Medicine and Cardiology at premier tertiary hospitals in Pakistan. Currently serving as Registrar General internal medicine at SIVUH Cork under HSE, Ireland.