

The Impact of Emergency Care Adjacent to the Grand Mosque on Cardiac Arrest Survival in Makkah

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Background: Out-of-hospital cardiac arrest represents a major burden worldwide. During Hajj, cardiac arrest becomes the main cause of mortality. Care Medical Jiwir Hospital at the entrance of the Grand Mosque, improved the emergency care capacity by establishing an intensive care unit (ICU), allowing the facility to receive, resuscitate, and provide post-cardiac arrest care without the need for transfer. Objective: to investigate the impact of Care Medical Jiwir Hospital, with its location at the entrance of the Grand Mosque and the addition of ICU services on survival to discharge rates in patients with cardiac arrest.

Methods: This was a retrospective study conducted at CARE Medical Jiwir in Saudi Arabia. The study included cardiac arrest patients from January 2024 to January 2026. The primary outcome was survival to hospital discharge. Secondary outcomes included the association between transport time and survival. We compared the results with data from three studies and performed the analysis using SPSS software.

Results: The study included 245 participants with a mean age of 63.7 ± 14.7 years; 67.3% of them were males, and 97.1% were non-Saudi. The overall survival rate was 20.0%, while the emergency department cardiac arrest survival was 30.4%. The out-of-hospital cardiac arrest survival was 18.9%, compared with 2.9% reported in the Saudi Out-of-Hospital Cardiac Arrest Registry (SOHAR), 5% reported in a national study during Hajj, and 8.8% globally reported by a meta-analysis. Among out-of-hospital cardiac arrest survival cases, survivors had significantly shorter transport time to the hospital (median 15 vs. 20 minutes; $p = 0.049$), and the maximum time to arrival was 30 minutes.

Conclusion: Care Medical Jiwir Hospital, with its location adjacent to the Grand Mosque along with the establishment of an ICU improved patients' survival following cardiac arrest. The out-of-hospital cardiac arrest survival rates were approximately sixfold higher than those reported in the SOHAR, four times higher than those reported during Hajj, and 2 times than that reported in a meta-analysis including studies conducted worldwide. These findings highlight the importance of establishing critical care centers proximal to mass gathering settings, which can improve cardiac arrest outcomes, which aligns with Saudi Vision 2030.

Keywords: ICU unit; Grand Mosque; Out-of-Hospital Cardiac Arrest; Survival Rate; Makkah