

# INPLASY PROTOCOL

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## Association between off-hour admission and short- and long-term mortality in acute myocardial infarction: a meta-analysis

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**Support:** Not applicable.

**Review Stage at time of this submission:** Data analysis.

**Conflicts of interest:**  
Not applicable.

**Review question / Objective:** Does the off-hour admissions are associated with increased mortality especially in patients with STEMI?

**Condition being studied:** Acute myocardial infarction. Mortality in patients.

**Information sources:** Systematic electronic searches in PubMed and EMBASE were performed and we used backward snowballing.

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 11 June 2020 and was last updated on 11 June 2020 (registration number INPLASY202060041).

### INTRODUCTION

**Review question / Objective:** Does the off-hour admissions are associated with increased mortality especially in patients with STEMI?

**Condition being studied:** Acute myocardial infarction. Mortality in patients.

### METHODS

**Search strategy:** Systematic electronic searches in PubMed and EMBASE were performed from the date of database inception to March 21, 2020, without language restrictions. Electronic searches were conducted with controlled vocabulary

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(MeSH in PubMed and Emtree in Embase) and keywords as search terms.

**Participant or population:** Adults with acute myocardial infarction (as diagnosed using any recognised diagnostic criteria).

**Intervention:** Adult patients with acute myocardial infarction who presented on off-hour admission.

**Comparator:** Patients with acute myocardial infarction who presented on regular hour.

**Study designs to be included:** Any study design about human beings.

**Eligibility criteria:** We included these studies if they were well-defined about off-hour and on-hour admissions and compared with the outcomes among patients with off-hour versus on-hour presentation.

**Information sources:** Systematic electronic searches in PubMed and EMBASE were performed and we used backward snowballing.

**Main outcome(s):** Short-term (in-hospital and 30-day) all-cause mortality.

**Quality assessment / Risk of bias analysis:** We evaluated the methodological quality of the included studies by using the Newcastle-Ottawa scale. Two investigators independently assessed 3 domains: (1) cohort selection, (2) comparability, and (3) outcome. The maximum score for an observational study was 9 points.

**Strategy of data synthesis:** Pooled odds ratios (ORs) and corresponding 95% confidence interval (CI) for categorical variables (dichotomous outcomes) were calculated using a random effects model to minimize the effect of clinical and methodological heterogeneity among studies, with the inverse variance method.<sup>16</sup> We calculated adjusted or unadjusted ORs with 95% CIs for the overall effect estimate. When an adjusted HR or RR were reported, we thought it

approximate the relative effect measure reported in other studies that used ORs. I2 values were used to estimate statistical heterogeneity. I2 50% indicated unimportant, moderate, or substantial heterogeneity, respectively.<sup>17</sup> Statistical significance was set at  $P < .05$  (2-sided). Publication bias was assessed by visual inspection of a funnel plot and formal testing by using Egger's test.

**Subgroup analysis:** We did subgroup analysis by type of AMI (STEMI versus NSTEMI), type of off-hour (weekend, holiday and night versus weekend and holiday versus night), measured time of presentation (arrival versus admission versus start of percutaneous coronary intervention) and region (North America versus Europe versus Asia and others). When the adjusted data were not being reported, we used raw data in subgroup analysis.

**Sensibility analysis:** We did not make sensibility analysis because we did the meta-regression to examine the robustness of primary results.

**Country(ies) involved:** China.

**Keywords:** off-hours; admission; acute myocardial infarction; meta-analysis.

**Contributions of each author:**

Author 1 - Xiao-Ce Dai - Analysis and interpretation of data, drafting the article, reviewing and editing the article.

Author 2 - Xiao-Ming Xu - Interpretation of data.

Author 3 - Lan Ma - Drafting the manuscript, checking the methodology and making the data curation.

Author 4 - Ying Dai - Conception and design of the study, acquisition of data, final approval of the version to be published.