



PEER-REVIEW REPORT

Name of journal: *World Journal of Cardiology*

Manuscript NO: 82120

Title: Effect of reperfusion strategy on QT dispersion in patients with acute myocardial infarction: Impact on in-hospital arrhythmia

Provenance and peer review: Unsolicited Manuscript; Externally peer reviewed

Peer-review model: Single blind

Reviewer's code: 06277946

Position: Peer Reviewer

Academic degree: MD

Professional title: Doctor

Reviewer's Country/Territory: India

Author's Country/Territory: Egypt

Manuscript submission date: 2022-12-12

Reviewer chosen by: AI Technique

Reviewer accepted review: 2022-12-16 21:34

Reviewer performed review: 2022-12-25 18:23

Review time: 8 Days and 20 Hours

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|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Scientific quality | <input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input checked="" type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish |
| Language quality | <input type="checkbox"/> Grade A: Priority publishing <input checked="" type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection |
| Conclusion | <input type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input checked="" type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input type="checkbox"/> Rejection |
| Re-review | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |



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| Peer-reviewer statements | Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous |
| | Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |

SPECIFIC COMMENTS TO AUTHORS

Studies on QTD and QTcD in STEMI and following revascularization exists in literature, only measuring QTD and QTcD with a software is new. Similar results by other authors, but this study shows statistical difference. There is no clarity in patient enrollment according to inclusion criteria. How many of each group had successful reperfusion. Streptokinase used which have low reperfusion rate. More patients in group 2 had smoking hypertension diabetes f/h of CAD and longer time intervals, each can influence the result. Multiple regression analysis? Patients number less, not identical group and drugs use history not known



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Reviewer's code: 03459555

Position: Peer Reviewer

Academic degree: N/A

Professional title: N/A

Reviewer's Country/Territory: Argentina

Author's Country/Territory: Egypt

Manuscript submission date: 2022-12-12

Reviewer chosen by: AI Technique

Reviewer accepted review: 2023-01-05 18:24

Reviewer performed review: 2023-01-17 05:21

Review time: 11 Days and 10 Hours

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|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Scientific quality | <input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input type="checkbox"/> Grade C: Good <input checked="" type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish |
| Novelty of this manuscript | <input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Good <input checked="" type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No novelty |
| Creativity or innovation of this manuscript | <input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Good <input checked="" type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No creativity or innovation |



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| Scientific significance of the conclusion in this manuscript | <input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Good <input checked="" type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No scientific significance |
| Language quality | <input type="checkbox"/> Grade A: Priority publishing <input checked="" type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection |
| Conclusion | <input type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input checked="" type="checkbox"/> Major revision <input type="checkbox"/> Rejection |
| Re-review | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
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| | Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |

SPECIFIC COMMENTS TO AUTHORS

The article "Effect of Reperfusion Strategy on QT Dispersion in Patients with Acute Myocardial Infarction: Impact on In-hospital Arrhythmias" could contribute to the field. In recent years, there has been a lot of interest in using the analysis of ventricular repolarization on the ECG to predict the risk of arrhythmias during myocardial infarctions. However, the results from previous studies are inconsistent, and it can be difficult to standardize the dispersion assessment methods, making them hard to use in clinical practice. The current article's co-authors have previously presented arrhythmic results using additional metrics like QT interval and dispersion, T - peak - to - T - end interval (Tp - Te), and dispersion and Tp - Te/QT ratio (<https://doi.org/10.1111/anec.12637>). Previous studies have found a link between certain measures of ventricular repolarization and an increased risk of arrhythmic death, but others have not seen the same results. Major comment It can be more helpful to use multiple risk markers to get a more accurate assessment of the risk of arrhythmias. Specifically, authors should perform multiple logistic regression or additional classification models. Some of the well-known variables should be taken into account in



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a univariate analysis. Left ventricular ejection fraction (LVEF) <40% and Older age are considered strong predictors of ventricular arrhythmias after reperfusion in STEMI. Larger infarct sizes, an ECG surrogate like ST elevation in >6 leads, and microvascular obstruction are also associated with an increased risk of ventricular arrhythmias. Patients with a previous history of ventricular arrhythmias are at a higher risk of developing them after reperfusion in STEMI. Infarcts in the anterior wall of the heart and elevated levels of cardiac enzymes, such as troponin, are associated with an increased risk of ventricular arrhythmias after reperfusion in STEMI. Hypertension is associated with an increased risk of ventricular arrhythmias after reperfusion in STEMI. A major confounder could be the criteria of successful fibrinolysis since there is evidence that the sensitivity and specificity of these criteria are low. More precision should be incorporated into the description of the period of arrhythmias monitoring. It is not clear whether the arrhythmic events occurred before or after the second measurement of QT intervals. The larger difference in QT and QTc dispersion seems to be at admission between patients that were treated with PCI and those allocated to fibrinolysis. Also, due to maximum QTc. Both results weaken the hypothesis and compromise the conclusions. A careful review of the automated measurement of the QT intervals should be included to claim the first study to use it. The recent meta-analysis "Association of QT dispersion with mortality and arrhythmic events – A meta - analysis of observational studies" (doi: 10.1002/joa3.12253) should be considered by the authors as well as the original article "Ventricular arrhythmias are associated with increased QT interval and QRS dispersion in patients with ST-elevation myocardial infarction." (<https://doi.org/10.1016/j.repc.2021.03.015>) QRS dispersion and QRS lengthening could contribute to QT dispersion measurements. Please adjust for these elements. The results could be better presented. The tables are not well designed. Avoid repeating results in the text and the tables.