The Role of N-Acetylcysteine in Platelet Aggregation and Reperfusion Injury in Recent Years

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Abstract

Introduction:
N-acetylcysteine (NAC) is an amino acid that contains a cysteine group and is currently used widely in various fields of medical research especially in cardiology. In this review, potential benefits of NAC in the aggregation of platelet and reperfusion injury are evaluated.

Methods and Results:
The available evidence was collected by searching Scopus, Pub-Med, Medline, Cochrane central register of controlled trials, and Cochrane database systematic reviews. Our searching was performed without time limitation and only English language articles were included in this review. Key words used as search terms included "N-acetylcysteine", "platelet aggregation", "reperfusion injury". Over the past decade, several investigations were carried out to ascertain reperfusion injury and antiplatelet properties of NAC, and in this article the results of investigations in both models (human and animal) were addressed in details**.** The results revealed that NAC has an important antiplatelet property in animal models while this effect is not very significant in human models and needs more investigations. However, its reperfusion injury in both models is worth noticing.

Conclusions:
Due to the limited data about effectiveness of NAC in both human and animal as antiplatelet agent, more investigation is needed to evaluate NAC efficacy in platelet aggregation and reperfusion injury especially in human studies in the future.

Key words:

NAC, Antiplatelet agent, Cardiology, Platelet aggregation, Reperfusion injury, Ischemic reperfusion injury, Myocardial infarction.