EFFECT OF CYCLOPHOSPHAMIDE ON MYOCARDIAL ISCHEMIA/REPERFUSION INJURY IN RATS

To the Editor:

Wang and associates have recently published a very interesting and innovative origin of thought in which investigators have demonstrated the protective role of cyclophosphamide against myocardial ischemia/reperfusion injury in rats. In this study, cyclophosphamide showed a favorable effect on myocardial function in various parameters, which included improvement in left ventricular systolic pressure, left ventricular end-diastolic pressure, and maximum rate of rise or fall of left ventricular pressure. Apart from this, infarct size was reduced, along with improvement in histopathologic damage score, and plasma high-sensitivity C-reactive protein concentration, which is an inflammatory marker, was reduced significantly. However, we would like to highlight some of the points regarding this study

1. The study showed that cyclophosphamide decreased the C-reactive protein levels significantly, but it is not the proposed specific mechanism of action alone to have anti-inflammatory action. Other markers of inflammation, such as Cox inhibition, should also have been evaluated before making the final conclusion.

2. In this study, pretreatment with cyclophosphamide or saline was given before inducing ischemia/reperfusion. Thus, in this study design, investigators should have evaluated whether the drug cyclophosphamide or saline had any beneficial or detrimental effect before proceeding for ischemia and reperfusion or sham surgery.

3. The cardioprotective role of cyclophosphamide could have been evaluated on creatine kinase, myocardial band of creatine kinase, and troponin I, which are the myocardial injury markers.

4. Various studies have evaluated the role of cytokines, which include interleukins 6 and 8, interferon-gamma, and tumor necrosis factor-alpha, which are upregulated after ischemia/reperfusion injury. In this present study, too, the expression of these cytokines, which are mediators of inflammation, could have been evaluated in comparison with saline or cyclophosphamide.

The present study provides useful information for more effective and targeted treatment for patients with ischemic heart disease, but the aforementioned points should be discussed for future therapeutic implication and reconfirmation in clinical studies.

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References


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