

High-doses vitamin C improves cardiac injury through preventing hyper-inflammatory response in coronavirus disease 2019

Guozhi Xia¹, Di Fan², Chaoran Ma², Yanru He², Ming Wang², Yaohu Zhu², and Qiangsun Zheng²

¹Second Affiliated Hospital of Xi'an Jiaotong University

²Affiliation not available

August 3, 2020

Abstract

Aim: To assess effect of high-dose vitamin C on cardiac injury in coronavirus disease 2019 (COVID-19). **Methods:** The study was designed based on the severe and critically ill COVID-19 with cardiac injury. Demographics and baseline clinical characteristics were collected and analyzed in addition to laboratory examinations including inflammatory markers on admission and at 14 days after treatment from the electronic medical records. Participants were followed-up for 14 days after treatment with high-dose vitamin C in addition to conventional therapy. **Result:** The patients (n = 113) were categorized into the improved cardiac injury (ICI) group (n = 70) and the non-improved cardiac injury (NICI) group (n = 43). Overall, 51 (45.1%) patients were administrated with high-dose vitamin C, the percentages of patients treated with high-dose vitamin C were higher in the ICI group than that in the NICI group (52.8% vs 32.5%, P = 0.035). Further analysis showed that concentrations of high-sensitivity C-reactive protein (hs-CRP), tumor necrosis factor (TNF)- α , interleukin-2 receptor (IL-2R), IL-6 and IL-8 significantly decreased at 14 days after treatment in patients treated with high-dose vitamin C compared with those in patients administrated without high-dose vitamin C. Meanwhile, similar results were also observed regarding changes in inflammatory markers from baseline to 14 days after treatment in patients receiving high-dose vitamin C. **Conclusion:** High-dose vitamin C can improve cardiac injury through preventing hyper-inflammatory response in severe and critically ill COVID-19.

Hosted file

Manuscript.doc available at <https://authorea.com/users/348339/articles/473716-high-doses-vitamin-c-improves-cardiac-injury-through-preventing-hyper-inflammatory-response-in-coronavirus-disease-2019>





