

# High-doses vitamin C improves cardiac injury through attenuating hyperinflammation in COVID-19

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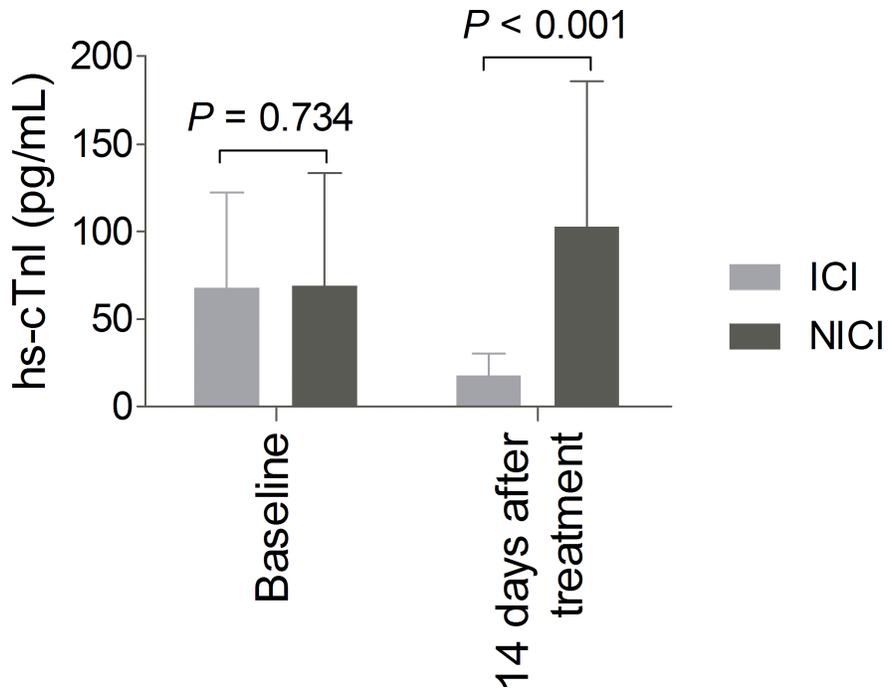
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## Abstract

**Background:** Cardiac injury is common and associated with worse clinical outcomes in COVID-19. Data are lacking whether high-dose intravenous vitamin C (HIVC) could help to improve cardiac injury in the pandemic. **Methods:** The study included severe and critically ill COVID-19 with cardiac injury. Troponin I and inflammatory markers were collected at admission and 14 days after treatment with HIVC along with symptomatic supportive treatment from the electronic medical records. **Results:** 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 HIVC, the percentages of patients with HIVC were higher in the ICI group than those in the NICI group. Logistic regression analysis revealed that HIVC was independently associated with improved cardiac injury. Further analysis showed that inflammatory markers levels significantly decreased at 14 days after treatment with HIVC compared to those without HIVC. Meanwhile, similar results were also observed regarding changes in inflammatory markers levels from baseline to 14 days after treatment with HIVC. **Conclusions:** HIVC can improve cardiac injury through attenuating hyperinflammation in severe and critically ill patients with COVID-19.

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# Numbers of patients treated with HIVC

