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Immunosuppressive therapy and prognosis in biopsy-proven fulminant lymphocytic myocarditis requiring veno-arterial extracorporeal membranous oxygenation support

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On behalf: CHANGE-PUMP Investigators

Topic(s):
Myocarditis

Citation:

Background: Fulminant myocarditis is one of the fatal diseases for which effective management has not yet been established. Immunosuppressive therapy (IST) using corticosteroid has been actively applied to giant cell or eosinophilic myocarditis, there is no consensus on the efficacy of lymphocytic myocarditis, which is suspected of involving viral infection. Actually, IST for lymphocytic myocarditis is not recommended in the European Society of Cardiology guidelines, but in the Japanese Circulation Society guidelines, it is approved for use in refractory cases in the absence of curative therapy for myocarditis established. Purpose: The purpose of this study was to explore the potential efficacy of immunosuppressive therapy on acute phase in fulminant lymphocytic myocarditis (FLM) requiring veno-arterial extracorporeal membranous oxygenation (VA-ECMO) support. Method: We conducted CHANGE-PUMP study that was retrospectively enrolled 99 patients with fulminant myocarditis required VA-ECMO support in the Tokai area (central part of Japan) for the past 20 years. Lymphocytic myocarditis was defined by pathological category. Patients were divided into two groups depending on whether IST using corticosteroid was performed in the clinical course. Results: Sixty-six patients were pathologically diagnosed as fulminant myocarditis by endomyocardial biopsy, of which only 49 patients were FLM. IST were indicated in 8 (16%) out of 49 patients of FLM (IST group; n=8, non-IST group; n=41). Kaplan-Meier survival analysis showed a lower survival rate in the IST group than in the non-IST group (p=0.073). However, in all cases, based on our guidelines, IST was initiated after becoming refractory to MCS treatment. Conclusion: In the retrospective analysis, biopsy-proven FLM patients with IST required VA-ECMO support had low survival rates. However, the timing of IST introduction was late and concerned. In the present era when advanced mechanical support appears and the survival rate of fulminant myocarditis is expected to improve, a multicenter prospective study is needed to establish an indication of IST in the acute phase of fulminant myocarditis.
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