A life support based comprehensive treatment regimen dramatically lowers the in-hospital mortality of patients with fulminant myocarditis — a multiple center study

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BACKGROUND: Fulminant myocarditis (FM) is characterized by rapid onset and progression to cardiac and circulatory failure. It has high mortality; however, patients may benefit from short-term circulatory support. This study evaluated the therapeutic efficacy of a life support–based comprehensive treatment regimen (LSBCTR) for FM and demonstrated that it saved the lives of FM patients.

METHODS: One hundred and fourteen FM patients were recruited from January 2007 to October 2017 were divided into two groups: those who received LSBCTR (65 cases), including management of fluids and nutrients, use of antiviral drugs and large doses of glucocorticoids (methylprednisolone over 200 mg) and immunoglobulins, continuous renal replacement therapy (CRRT), and life support (artificial positive pressure respiration, intra-aortic balloon pump [IABP] with or without extracorporeal membrane oxygenation [ECMO]), and those who received traditional methods (74 cases). The primary endpoints were in-hospital death and length of hospital stay for survivors.

RESULTS: Of the population, 41 patients (36.0%) died in the hospital. In-hospital mortality rates were 3.0% (2/65) for the LSBCTR group and 52.7% (39/74) for the traditional treatment group (P<0.001). Early life support (IABP with or without ECMO and a respirator) and early applications of CRRT, antiviral therapy, and sufficient doses of glucocorticoids and immunoglobulins individually contribute to the efficiency of reducing in-hospital mortality. Vasoactive agents did not improve prognosis, especially noradrenaline, which dramatically increased the incidence of death. CONCLUSION: Our data described comprehensive treatment for patients with FM that can dramatically reduce in-hospital mortality. Its generalization and application in clinical practice will efficiently save lives. Clinical Trial: NCT03268642.