Specific options for treatment of dilated cardiomyopathy

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Dilated cardiomyopathy (DCM) is a myocardial disease that is defined by left ventricular or biventricular dilatation and systolic dysfunction. Despite advances in medical treatment of heart failure, the prognosis for a subset of DCM patients is still poor. Until now, no evidence-based specific therapy is available for treatment of DCM. In addition to a genetic background, viral infection and myocardial inflammation play a causal role in the etiology of DCM factors that call for development of specific therapeutic interventions. Disturbances of the cellular and humoral immune system have been implicated in the development of DCM: Clinical and experimental data indicate that myocarditis involving autoimmune mechanisms can progress to DCM. Abnormalities of the cellular immune system are a common feature of both myocarditis and DCM. Infiltration with lymphocytes and mononuclear cells are frequently found in endomyocardial biopsies of DCM patients. The term inflammatory cardiomyopathy may therefore be applicable in describing the pathogenesis of the disease process of these patients. In addition, experimental studies have shown that production of circulating cardiac autoantibodies induce cardiac damage and progressive contractile dysfunction that is similar to DCM. In the clinical setting, progression from myocarditis to DCM may occur in patients with myocarditis who have developed pathogenic cardiac autoantibodies directed against myocardial structural, sarcoplasmic or sarcolemmal proteins. As a consequence, immunomodulatory and anti-inflammatory intervention strategies may be applicable for treatment of DCM. Of interest, a previous monocentric smaller placebo-controlled study with patients suffering from virus-negative inflammatory cardiomyopathy showed that immunosuppressive therapy improves left ventricular (LV) function. Furthermore, small open-controlled studies showed that removal of circulating antibodies by immunoadsorption (IA) results in improvement of cardiac function, decrease in myocardial inflammation, and symptom relief. Based on these finding, a multicenter study on the effects of IA on LV function of DCM patients is currently being conducted (http://clinicaltrials.gov/show/NCT00558584).

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