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Differential therapy of myocarditis and inflammatory cardiomyopathy

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Cardiomyocytes can be destroyed by direct virus damage, the antiviral immune response, or a truly autoimmune injury. Besides an optimal heart failure therapy, the mainstay of treatment for myocarditis and inflammatory cardiomyopathy (CMi) is the biopsy-proven specific immunomodulatory treatment regarding the underlying pathophysiological mechanisms. Chronic viral infections of the heart (mainly Parvovirus B19, Human-Herpes virus (HHV) 6, Coxsackie-adeno virus, Epstein-Barr virus, Cytomegaly virus, and Hepatitis virus) are considered one antecedent event leading to progressive dysfunction of the myocardium, often with an impaired prognosis due to a virus or immune-mediated myocardial injury. The effectiveness of anti-viral-therapy has been proven in recent studies, showing that enterovirus/adenovirus – positive patients benefit from anti-viral therapy with interferon beta-1b, whereas in patients suffering from parvovirus B19 infection no established therapy exists. However, the nucleoside analogues telbivudine seems to be a promising drug in patients with proof of active viral replication. Follow-up studies revealed an association with HHV6 and the clinical course of myocarditis and CMi. HHV-6 is able to integrate its genomes into telomeres of human chromosomes. We recently demonstrated that antiviral therapy with ganciclovir can diminish HHV-6 replication as well as cardiac symptoms of these patients. Myocardial inflammatory processes due to autoimmunity warrant immunosuppressive treatment in order to prevent immune-mediated myocardial injury. Immunosuppression (treatment with prednisone and azathioprine for 6 months) demands biopsy-based exclusion of virus since virus-positive patients do not improve or even deteriorate under anti-inflammatory treatment, while virus-negative patients with post-infectious, auto-immune inflammatory process respond well in clinical trials, and after termination long lasting LVEF improvement has been documented. In myocarditis and inflammatory cardiomyopathy, there is, apart from heart failure therapies, no alternative to an etiologically driven specific treatment. Endomyocardial biopsy is the only diagnostic tool for establishing the pathophysiological mechanisms (viral or immune-mediated). The exact analysis and quantification of intramyocardial infiltrates as well as the diagnosis of viral pathogens has high clinical value for initiating a specific, pathophysiological driven, personalized therapy.

Biography

Dr. Heinz-Peter Schultheiss, Professor of Internal Medicine and Cardiology is CEO of Institute for cardiac diagnostic and therapy (IKDT) Berlin, Germany since 2003. He was the chairman of the Working group “Inflammatory heart muscle diseases“ of the German Society of Cardiology, Chairman of the “Working Group on Myocardial and Pericardial Disease“ of the European Society of Cardiology, Member of the "Council on Cardiomyopathies“ of the International Society of Cardiology, Chairman of the Medical Society Berlin, Member of German Society for Internal Medicine, Member of European Society of Cardiology.