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BEYOND PLASMA LEAKAGE: RECOGNIZING MYOCARDITIS IN SEVERE DENGUE

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Dengue fever, caused by the infection with dengue virus (DENV), which is a major arboviral disease with a large spectrum of clinical manifestations traditionally connected with fever, hemorrhagic manifestations, and plasma leakage. But in a rare with growing evidence lights on cardiac involvement, particularly myocarditis as a clinically significant yet underrecognized condition. The disease itself is endemic in Central and South America, Africa, the middle East and south Asia. A meta-analysis showed that pooled estimate of myocarditis in dengue fever was 12.4%.

Multiple factors contribute to the development of Myocarditis in dengue. Direct viral invasion of cardiomyocytes has been suggested and its supported by finding viral antigens in the myocardium. Plus, immune-mediated injury adds a main component by the release of excessive cytokines which contain tumor necrosis factor-alpha and interleukins contributing to inflammation of the myocardium. Microvascular dysfunction with increased vascular permeability further contributes to interstitial edema and reduced blood flow. Additionally, when the viral and heart tissue antigens resemble each other (molecular mimicry), it can trigger the immune system to mistakenly attack the heart resulting in the autoimmune changes.

The histopathological findings reported in the literature consistently show edema, capillary congestion, and focal hemorrhages within the tissues. The inflammatory infiltrates are commonly observed alongside degrees of myocyte degeneration and necrosis. In most severe cases, diffuse myocardial involvement and the disruption of cardiac fibers structures. In gross examination shows mild cardiomegaly and a 'flabby' myocardium accompanied by pericardial effusion.

In some cases, myocarditis occurs without symptoms. When symptoms do appear, they may include irregular heartbeats, chest pain, and heart failure. Tests like EKGs and blood tests often show signs of heart damage. Echocardiograms show reduced heart function, and MRI can show inflammation of the heart muscle. A biopsy is the best way to diagnose it but is rarely done. In summary, myocarditis is a rare but serious complication of dengue. It involves inflammation and damage to heart cells. Most cases get better on their own, but severe cases can be life-threatening. More research is needed to understand it better and improve treatment.