

Proinflammatory cytokines, soluble Fas receptor, nitric oxide and angiotensin converting enzyme in congestive heart failure

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We measured serum interleukin-2 receptor (sIL-2R), tumor necrosis factor- α (TNF- α), Fas receptor (sFas), nitric oxide (NO), and angiotensin converting enzyme (ACE) activity in 45 patients with congestive heart failure (CHF) of different etiologies. The relationship between these bioindices and the severity of heart failure was analysed. Patients were classified according to the etiology of heart failure into: 15 patients with rheumatic valvular heart disease (RHD), 17 with ischemic heart disease (IHD) and 13 with idiopathic dilated cardiomyopathy (DCM). Patients were further classified according to severity of CHF following the New York Heart Association classification (NYHA) into: NYHA class II (n= 7), NYHA class III (n=20) and NYHA class IV (n=18). Eighteen healthy subjects were included as controls. Serum sIL-2R, TNF- α and sFas levels were determined by ELISA while serum NO and ACE levels were measured by colorimetric methods. Doppler Echocardiography was performed for all participants. Levels of sIL-2R, TNF- α , sFas, NO, and ACE were significantly higher in CHF patients than controls. Levels of the bioindices varied according to the CHF etiology. TNF- α level was the only one that had significant differences among different subgroups (RHD, IHD and DCM). The levels of sIL-2R, TNF- α , NO and sFas in patients with NYHA class IV were significantly higher than class II or III. Moreover, sIL-2R, TNF- α and NO levels were significantly higher in patients with diastolic dysfunction than patients with normal diastolic function. A significant positive correlations were found between sFas and both TNF- α and sIL-2R and between TNF- α and both NO and diastolic function. In addition, significant positive correlations were found between TNF- α and sIL-2R in both IHD and RHD patients and between sIL-2R and both ACE in IHD patients and diastolic function in DCM patients. It is concluded that a relationship exists between immune system activation, apoptosis and renin- angiotensin system in CHF and this may play a significant role in the pathophysiology and prognosis of the disease.