HF associates with increased level of proinflammatory cytokines and systemic low grade inflammation. Generalized tissue hypoperfusion resulted from decreased CO and peripheral vasoconstriction leads to circulatory hypoxia, cellular damage and development of “sterile” inflammation after activation of immune cells by Damage–Associated Molecular Patterns (DAMPs). In response immune cells begin to synthetize proinflammatory cytokines IL–1, IL–6 and TNF–α. Another stimulus initiating inflammation is a hypoperfusion of the gut. Associated bacterial enteral translocation results in endotoxinemia. Endotoxin is a potent activator of different cells, including leukocytes and endothelial cells. High level of proinflammatory cytokines in patients with heart failure was detected. Proinflammatory cytokines suppress myocardial contractility, participate in cardiac remodeling, lead to oxidative and nitrozative stress, stimulate rate of cardiomyocytes loss in the failing heart, and impair ATP synthesis in the heart. Proinflammatory cytokines also lead to endothelial dysfunction, cachexia in advanced stages of heart failure and acute phase response.