

Oxidative stress and inflammation in heart failure: Mechanisms of damage and therapeutic alternatives

Estrés oxidativo e inflamación en insuficiencia cardiaca: Mecanismos de daño y alternativas terapéuticas

Miranda H, Rodrigo

Castro G, Pablo

Verdejo P, Hugo

Chiong, Mario

Díaz-Araya, Guillermo

Mellado, Rosemarie

Rojas, Diego

Concepción, Roberto

Lavandero, Sergio

Despite advances in treatment, chronic heart failure still is associated with a poor prognosis and remains a leading cause of cardiovascular death. Cumulating evidence suggests that imbalances in redox state lead to a higher generation of reactive oxygen species. This phenomenon, along with pro-inflammatory cytokine activation and extra cellular matrix alterations with reactive fibrosis, play an important role in the pathogenesis and progression of heart failure, through the development of endothelial and myocardial dysfunction. The understanding of the underlying phenomena and the metabolic pathways involved will allow further development of therapies aiming to change the natural history of heart failure.