

Adiponectin concentrations in patients with congestive heart failure – *A potential prognostic marker*

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Adiponectin is an adipocyte-derived cytokine with antiinflammatory, antidiabetic and antiatherogenic properties. Adiponectin is reduced in patients with obesity, diabetes, atherosclerosis and acute coronary syndrome.

It has been shown that adiponectin correlates negatively with C reactive protein (CRP), interleukin (IL) -6 and tumour necrosis factor (TNF α), suggesting adiponectin may antagonise some of their proinflammatory properties.

Congestive heart failure (CHF) is a complex syndrome of neurohormonal inflammatory dysregulation resulting in progressive cardiac remodelling. Evidence supports the role of immune system activation in the pathogenesis and progression of CHF, exemplified by raised circulating concentrations of TNF α , IL-6, and CRP.

This study evaluated concentrations of the adiponectin and the association with various inflammatory and neurohormonal mediators in patients with clinically controlled CHF of various degrees of severity (TNF α , CRP, IL6, BNP). It also studied its prognostic value in the prediction of morbidity and mortality.

175 outpatient persons with clinically controlled CHF were included and followed up for a minimum of 24 months. The study end points were all-cause death, hospitalizations caused by heart failure, or the combined occurrence of each.

Serum adiponectin concentrations were stratified according to NYHA class.

The more advanced the CHF was (according to NYHA class), the higher the adiponectin concentrations were. The ischaemic group of CHF had significantly lower adiponectin concentrations than the non-ischaemic group ($p=0.009$). No significant association was found between adiponectin concentrations and LVEF.

This study also have found that at adiponectin concentrations above the 75th centile, patients with CHF are at a significantly increased risk of death.

Diabetes mellitus in patients with CHF was also associated with reduced concentrations of adiponectin. Patients with CHF and chronic renal failure had significantly higher adiponectin concentrations than did patients with normal creatinine ($p=0.007$). Serum adiponectin concentrations significantly and positively correlated with the age of patients with CHF.

Adiponectin serum concentrations were significantly correlated with NT-proBNP and negatively with CRP. No association was found between adiponectin and either of the pro-inflammatory or anti-inflammatory cytokines.

In conclusion, this study shown that the serum concentrations of adiponectin are increased in patients with CHF and positively correlate with the severity of the clinical syndrome. Adiponectin concentrations can also predict a higher likelihood of death and morbidity and serve as a potential marker for monitoring patients with CHF and predicting their outcome.

Comment on the paper:

J George, S Patal, D Wexler et al – Circulating adiponectin concentrations in patients with congestive heart Failure *Heart* 2006; 92:1420-1424.