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Prognostic value of osteoprotegerin in chronic heart failure: the GISSI-HF trial

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Purpose: Osteoprotegerin (OPG), a member of the tumor necrosis factor receptor super family, is a strong prognostic indicator of mortality and heart failure in patients with acute coronary syndromes. The association between OPG levels and outcome in patients with chronic heart failure (CHF) is unknown. Accordingly, we assessed the association between OPG at baseline and the incidence of mortality from all causes in a large cohort of patients with chronic heart failure.

Methods: Circulating concentrations of OPG at baseline were assessed in 1229 patients with CHF included in the GISSI-HF trial. OPG was analyzed by ELISA. The association between OPG and outcome was assessed by Cox proportional hazards regression.

Results: During a median follow-up time of 3.9 years 332 patients died. By univariate analysis, baseline OPG levels were strongly associated with the incidence of death (hazard ratio (95% confidence interval): 1.53 (1.40-1.67) per 1 SD increase in log OPG. After adjustment for clinical risk markers, OPG remained a significant predictor of death (HR (95% CI): 1.20 (1.06-1.35); $p < 0.001$). The figure shows the cumulative mortality rate by tertiles of OPG ($p < 0.0001$).

Conclusion: In patients with CHF OPG is associated with the incidence of death independently of conventional cardiovascular risk factors.

