



BACKGROUND

- Galectin-3 (Gal-3) is a carbohydrate-binding lectin produced by macrophages, upregulated in hypertrophied hearts, emerging as an important mediator for the development of fibrosis and cardiac remodeling.
- The purpose of this study was to assess the survival prognostic value of Gal-3 in patients with severe congestive heart failure (CHF).

METHODS

- 73 fully treated HF patients were included in the study.
- Patient's characteristics: age 68 ± 13 years; males $n = 56$, females $n = 17$; ejection fraction $22 \pm 6\%$; NYHA II-IV; etiology: ischemic $n = 54$, dilated cardiomyopathy $n = 19$.
- The risk adjusted survival was analyzed over a 6-year follow-up period.
- Gal-3 levels were determined using an optimised enzyme-linked immunosorbent assay (ELISA) (Galectin-3 assay; BG Medicine, Waltham, MA, USA).
- Reference values for Gal-3 were obtained from 25 healthy controls.
- Survival curves of patients with Gal-3 below and above the median were compared by the Kaplan-Meier method (Log-Rank test).

RESULTS

- ✓ In comparison to controls, Gal-3 levels were significantly increased in CHF patients (geometric mean [95% CI]): 18.6 ng/mL [7.9-49.6] vs 10.3 [4.7-18.9]; $p < 0.0001$. **Fig. 1.**
- ✓ Gal-3 values in HF patients NYHA class II were (16.0 [7.9-42.3]) lower than those in NYHA class III (19.8 [8.0-45.5]; $p = 0.01$) and in NYHA class IV (23.1 [14.3-49.6]; $p = 0.01$). **Fig. 2.**
- ✓ During the follow-up, 43 patients died (worsening HF, $n = 29$; sudden death, $n = 11$; other CV death, $n = 3$) and 6 patients underwent a heart transplant.
- ✓ Time to 25% events rate were 130 days for subgroup with Gal-3 levels above the median (17 ng/mL) and 844 days for the subgroup with values below the median. Both survival curves differed significantly (Log-Rank=0.0053). **Fig. 3.**

FIGURE 1

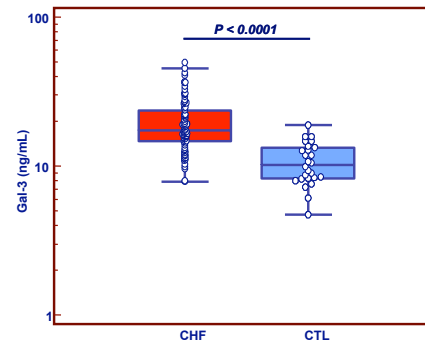


FIGURE 3

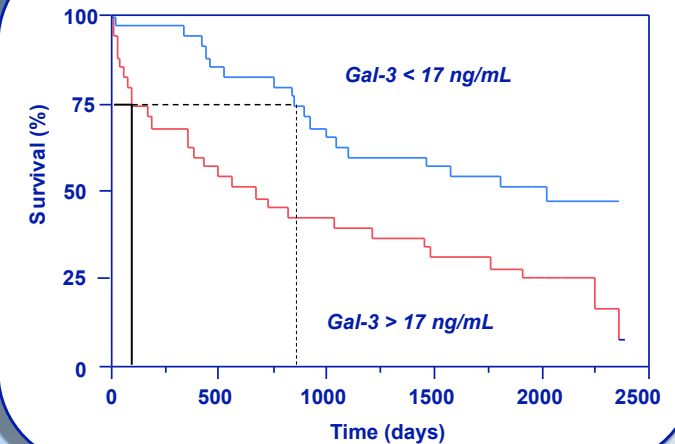
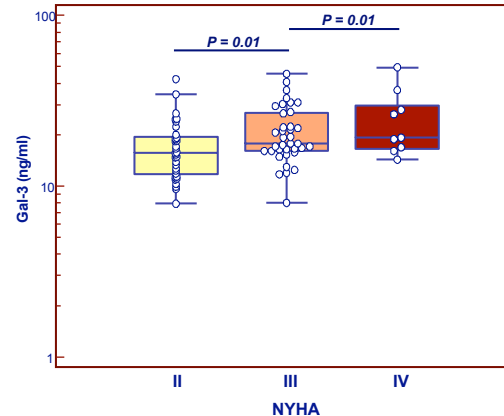


FIGURE 2



CONCLUSIONS

- ✓ Gal-3 circulating levels are significantly increased in congestive HF and correlated with the severity of functional class.
- ✓ Our data clearly demonstrate that Gal-3 identifies patients with very early risk of death from worsening heart failure or sudden death in whom more aggressive treatments (ICD, CRT and LVADs) can be targeted.

REFERENCES

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DISCLOSURE: NONE