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Serum galectin-3 as a prognostic factor in patients with diabetes mellitus

M. Gwechenberger¹, R. Pacher², M. Clodi², M. Resl², R. Wurm², G. Strunk³, J. Mascherbauer¹, M. Huelsmann¹¹Medical University of Vienna, Austria²Konventhospital Barmherzige Brueder, Austria³Complexity research, Austria

Background: Patients with diabetes have an increased risk for developing cardiovascular disease. Serum Galectin-3 (Gal-3) is a novel biomarker and has been associated with diabetes and heart failure. However, data on the predictive value of Gal-3 on outcome are limited. We evaluated the prognostic role of Gal-3 for cardiovascular events in diabetic patients.

Methods: Nine hundred one consecutive patients with type 2 diabetes were followed for cardiac events. The primary endpoint was defined as a composite endpoint of unplanned cardiac hospitalization and all-cause mortality. The secondary endpoints were defined as a) unplanned hospitalization and b) all-cause mortality. Gal-3 was tested to predict end points in the context of known other predictors, especially N-terminal pro-B-type natriuretic peptide (NT-proBNP).

Results: The mean age of the patients was 59.3±13.8 years (55.1% male), duration of diabetes was 12.5±12.1 years and the mean glycosylated hemoglobin (HbA1c) was 7.5 ±1.5%. The median Gal-3 and NT-proBNP serum levels were 25.7±19.0 ng/ml and 272.3±445.2 pg/ml respectively. After a mean follow up of 56.5 (IQR 60-61) months 23.2% of patients reached the primary endpoint. Kaplan-Meier analysis revealed a worse outcome in patients with elevated Gal-3. Elevated Gal-3 levels were predictive for the primary endpoint (p<0.0001). However, it was not predictive for outcome after adjustment for age, gender, NT-proBNP, body mass index (BMI) and glomerular filtration rate (GFR). The same observation was made for secondary endpoints. In contrast NT-proBNP was a significant predictor of all endpoints.

Conclusions: Serum Gal-3 is associated with cardiovascular outcome in diabetic patients. However when compared with established risk predictors like NT-proBNP, its value is limited.

Biography

Marianne Gwechenberger is specialized in cardiology, electrophysiology and heart failure.

marianne.gwechenberger@meduniwien.ac.at

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