

Original scientific paper



# A comparison of NT-proBNP and albuminuria for predicting cardiac events in patients with diabetes mellitus

Martin Clodi<sup>1,\*</sup>, Michael Resl<sup>1,\*</sup>, Stephanie Neuhold<sup>1</sup>,  
Martin Hülsmann<sup>1</sup>, Greisa Vila<sup>1</sup>, Marie Elhenicky<sup>1</sup>,  
Guido Strunk<sup>2</sup>, Heidemarie Abrahamian<sup>3</sup>, Rudolf Prager<sup>3</sup>,  
Anton Luger<sup>1</sup> and Richard Pacher<sup>1</sup>

European Journal of Preventive Cardiology  
19(5) 944–951  
© The European Society of Cardiology 2011  
Reprints and permissions:  
sagepub.co.uk/journalsPermissions.nav  
DOI: 10.1177/1741826711420015  
ejpc.sagepub.com  
SAGE

**Abstract**

**Aims:** Cardiovascular events are the most relevant events in patients with diabetes mellitus. We aimed to compare the

Downloaded from https://ai

## Results

### Patient characteristics

The study population consisted of 1071 consecutive patients (613 male, 458 female (42.8%)) enrolled between April 2005 and November 2007 (Table 1). The mean age was  $61 \pm 13$  years, the mean duration of diabetes was  $15 \pm 12$  years, and the mean HbA<sub>1c</sub> was  $7.5 \pm 3.1\%$ . Hypertension was present in 723 patients (67.8%). Mean systolic BP was  $144 \pm 23$  mmHg and mean diastolic BP was  $82 \pm 12$  mmHg. Plasma NT-proBNP levels were  $236 \pm 425$  pg/ml and mean plasma LDL levels were  $105.8 \pm 30.4$  mg/dl. In the whole population, 254 subjects (23.7%) had albuminuria: the albumin/creatinine ratio was between 30–300 mg/g in 170 patients and  $\geq 300$  mg/g in 58 patients. Also, 147 patients (13.8%) had a medical history of ischaemic heart disease, 38 patients (3.5%) had undergone a percutaneous coronary intervention, 46 patients (4.3%) had a coronary artery bypass, and 23 patients (2.2%) were presenting with atrial fibrillation.

information. Here we find a slight disadvantage over the second model; the c-index is 0.786.

Bootstrap testing supported the importance and robustness of ln(NT-proBNP) (Table 2). ln(NT-proBNP) was included in 100.0% of the bootstrap samples.

### Kaplan–Meier lifetime analysis

The Kaplan–Meier curves underlined the prognostic value of NT-proBNP in comparison with albuminuria. The curve of the albuminuric group with an NT-proBNP < 125 pg/ml was nearly similar to the group without albuminuria and NT-proBNP < 125 pg/ml (Figure 1).

## Discussion

**Our results clearly show that NT-proBNP is superior to albuminuria for predicting cardiac events in diabetic patients.** There are numerous established cardiovascular risk markers for patients with diabetes mellitus to

Roche Products Ltd user on 19 April 2024