

Endotrophin, quantified by a novel biomarker, is prognostic of outcome in heart failure patients

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BACKGROUND

Endotrophin is a type VI collagen-derived matrikine associated to mortality risk in heart failure.

Endotrophin can be quantified by nordicPRO-C6TM, which targets the C-terminal of type VI collagen α3 chain.

We evaluated the prognostic performance of a novel biomarker called full-length endotrophin, specifically designed to target the 77aa molecule at both peptide termini.

We investigated the performance of the novel assay in relation to NT-proBNP and PRO-C6.

METHODS

Baseline characteristics	
N of patients	103
Age (years)	76 [65-85]
Female Sex (%)	45 (43.7)
BMI (kg/m ²)	27 [24-30]
Endotrophin (ng/ml)	200 [119-309]
PRO-C6 (ng/ml)	11.2 [8.1-17.3]
NT-proBNP (pg/ml)	1780 [557-3846]

Endotrophin, PRO-C6 & NT-proBNP

Performance analysis (Receiver operating characteristic curves)
Survival analysis (Cox proportional hazards regression)

7-year all-cause mortality

Data are depicted as n (%) or median [IQR]

RESULTS

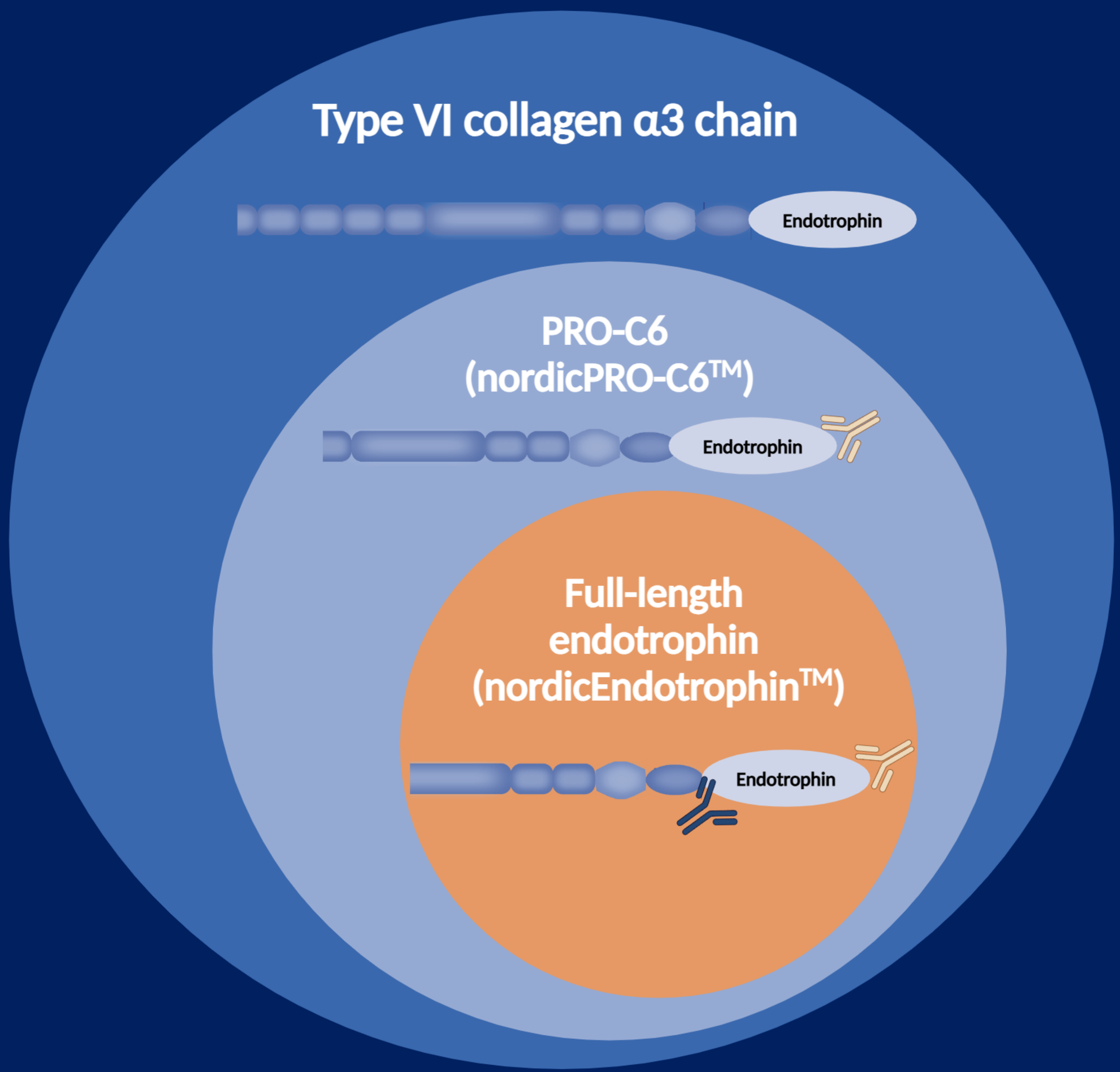
Full-length endotrophin achieved an area under the curve (AUC) of 0.77 (p < 0.001), while NT-proBNP had an AUC of 0.69 (p < 0.001) and PRO-C6 an AUC of 0.76 (p < 0.001) in discriminating patients at risk of all-cause mortality.

In a Cox multivariable analysis including age, sex, BMI, and the three biomarkers upon logarithmic transformation, the new assay retained its prognostic ability for mortality risk (HR per doubling of endotrophin 1.89, p = 0.0005) alongside age (HR 1.06, p = 0.0005), while both NT-proBNP and PRO-C6 were excluded from the model during backward selection.

CONCLUSION

This study presents the novel biomarker of full-length endotrophin demonstrating comparable performance to NT-proBNP and PRO-C6 in predicting mortality risk in HF patients. The biomarker's prognostic value remains robust even after adjusting for relevant risk factors.

A novel, full-length endotrophin assay as a prognostic tool for mortality risk in heart failure.



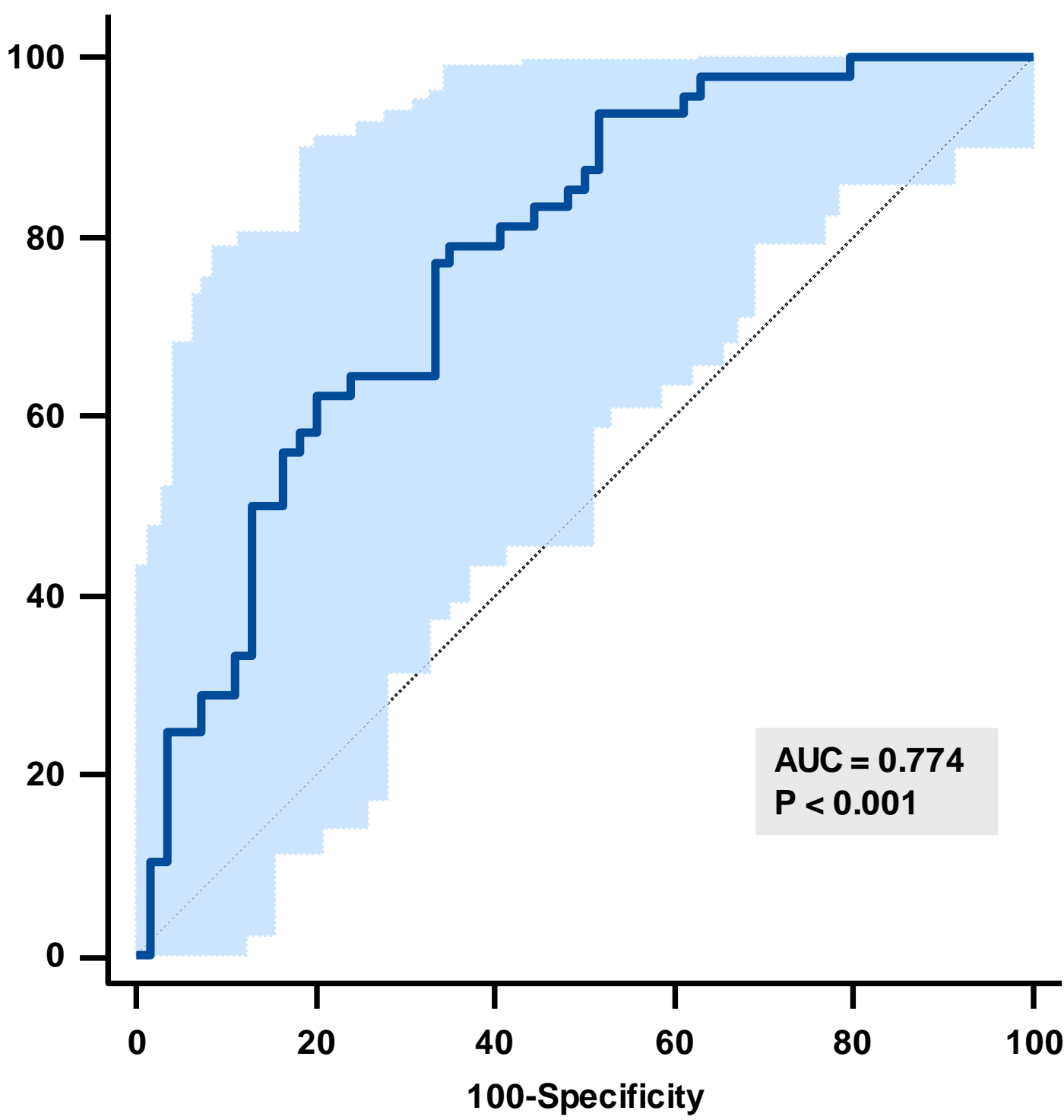
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DISCUSSION

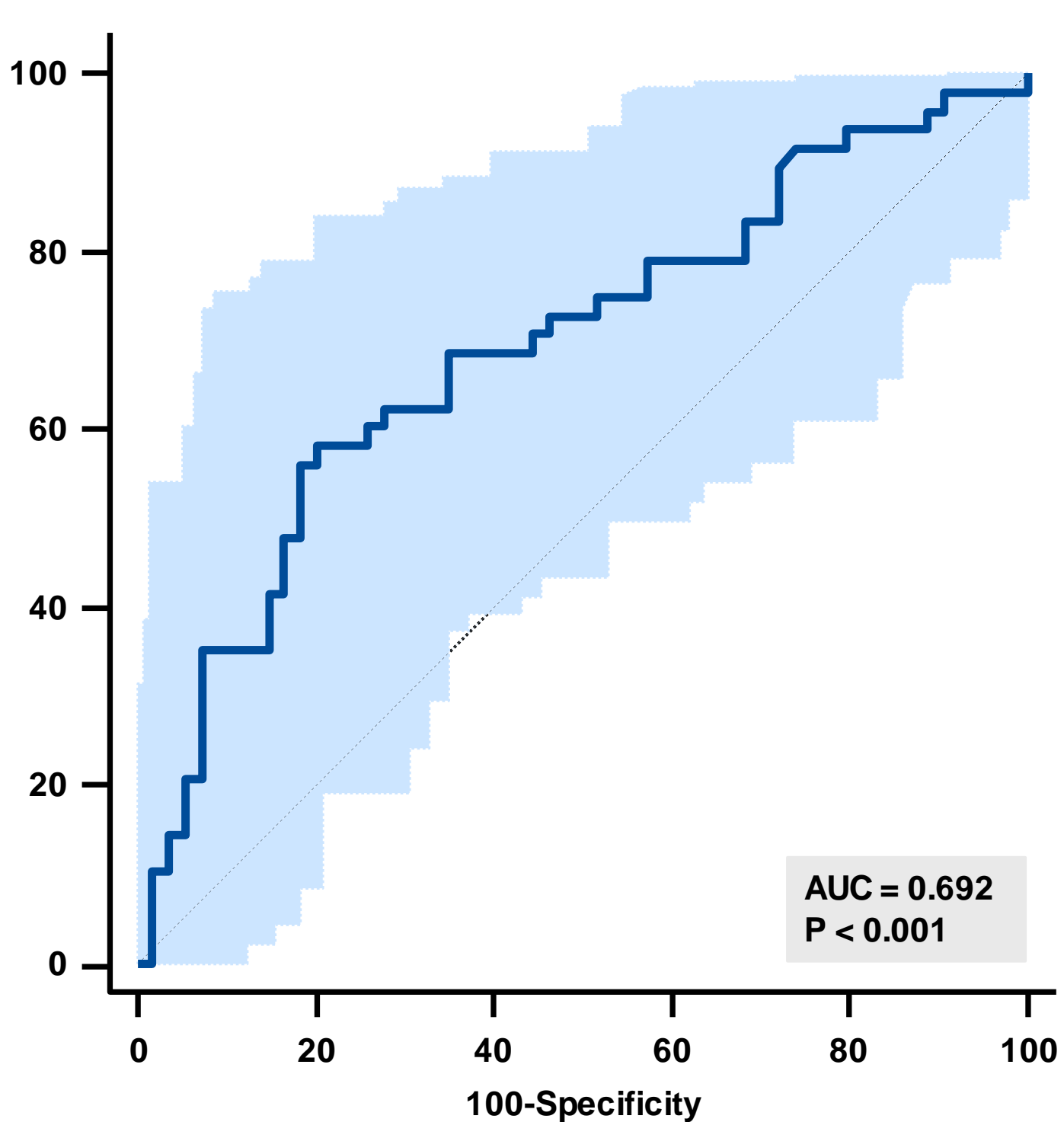
Our results suggest a potential clinical relevance of endotrophin in risk stratification and HF management. Further validation is needed to assess its applicability across diverse heart disease populations.

FIGURE 1



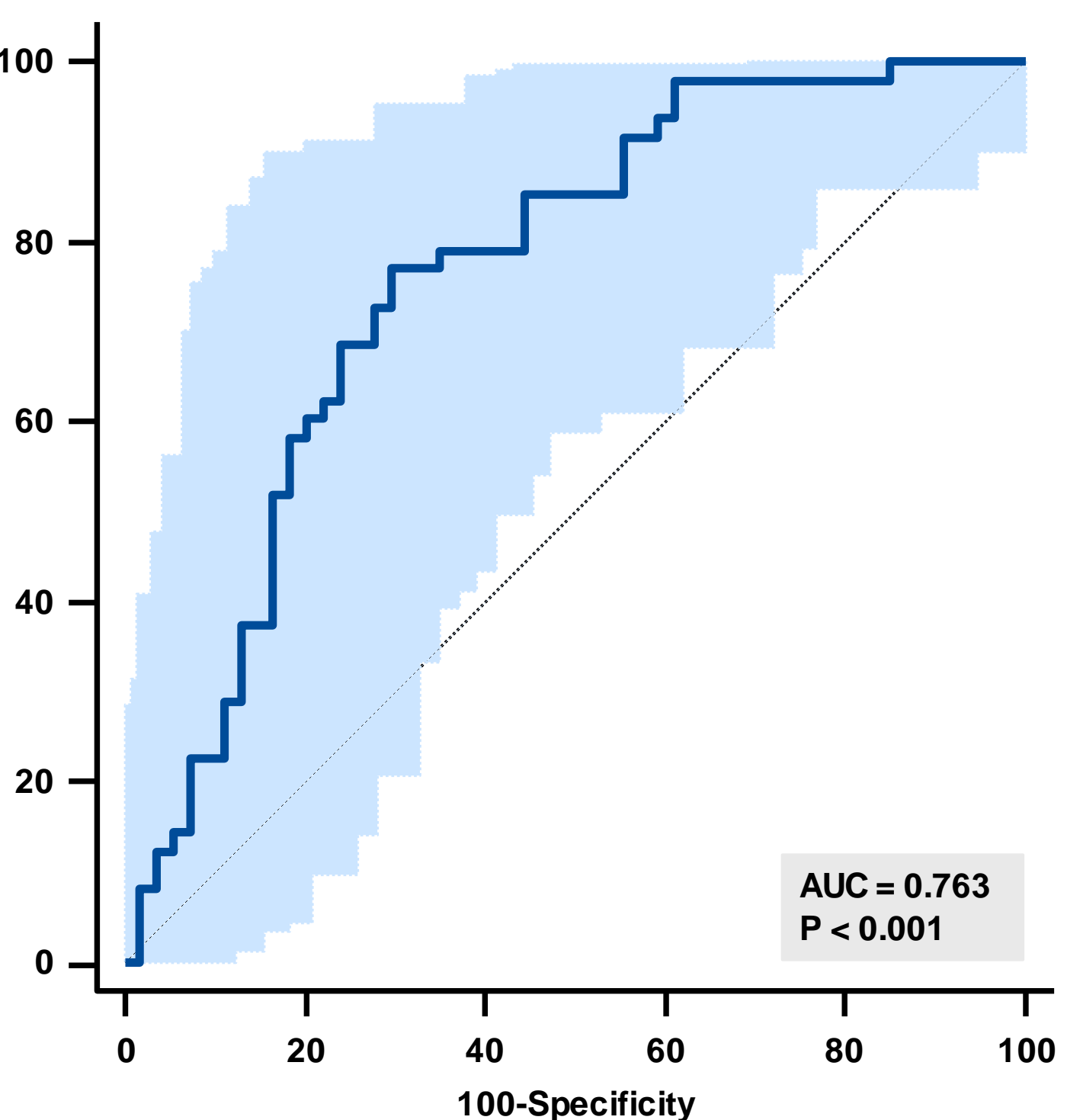
ROC curve for endotrophin. The ROC curve illustrates the performance of endotrophin in discriminating patients at all-cause mortality risk within the follow-up period.

FIGURE 2



ROC curve for NT-proBNP. The ROC curve illustrates the performance of NT-proBNP in discriminating patients at all-cause mortality risk within the follow-up period.

FIGURE 3



ROC curve for PRO-C6. The ROC curve illustrates the performance of PRO-C6 in discriminating patients at all-cause mortality risk within the follow-up period.

TABLE 2

Model	Univariable		Multivariable	
Variable	Hazard ratio	P	Hazard ratio	P
Endotrophin	2.16	<0.0001	1.89	0.0005
PRO-C6	2.27	<0.0001	NA	NA
NT-proBNP	1.27	0.0008	NA	NA
Age	1.08	<0.0001	1.06	0.0005
Sex	3.69	<0.0001	1.89	0.0623
BMI	1.00	0.91	NA	NA

Cox proportional hazards regression models. The table shows the hazard ratio for each variable included in the univariable and multivariable model.

DISCLOSURE INFORMATION

EA, MK and FG are employees and shareholders at Nordic Bioscience A/S.

