

Association between endostatin and mortality in patients with acute dyspnoea, with or without congestive heart failure: a single-centre, retrospective, observational study

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Conclusion

Elevated endostatin levels independently predicted 3-month mortality in acute dyspnoea patients with CHF, but not 1-month mortality. Endostatin may aid intermediate-term risk stratification and warrants further validation.

Background and Method

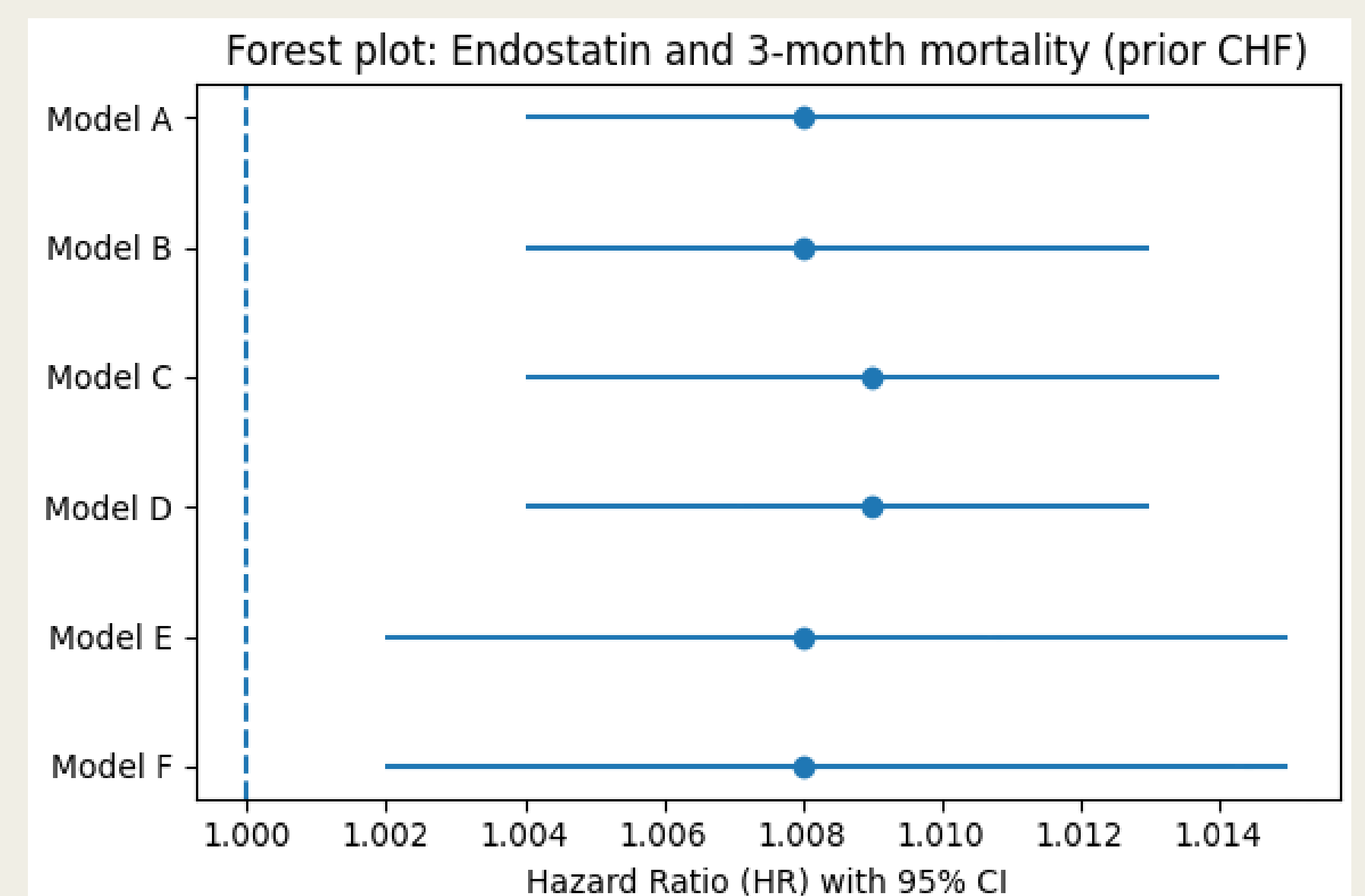
Acute dyspnoea is a frequent emergency department presentation with high short-term mortality. Improved risk stratification is needed, especially in patients with CHF. Endostatin has been proposed as a prognostic biomarker, but evidence in unselected acute dyspnoea populations is limited. In this prospective observational study, 723 hospitalised patients presenting with acute dyspnoea to the emergency department at Skåne University Hospital (2013–2018) were included. Endostatin levels were measured at presentation. Associations between endostatin and 1-month and 3-month all-cause mortality were analyzed using multivariable Cox regression, stratified by history of CHF and adjusted for common cardiovascular risk factors.

Result

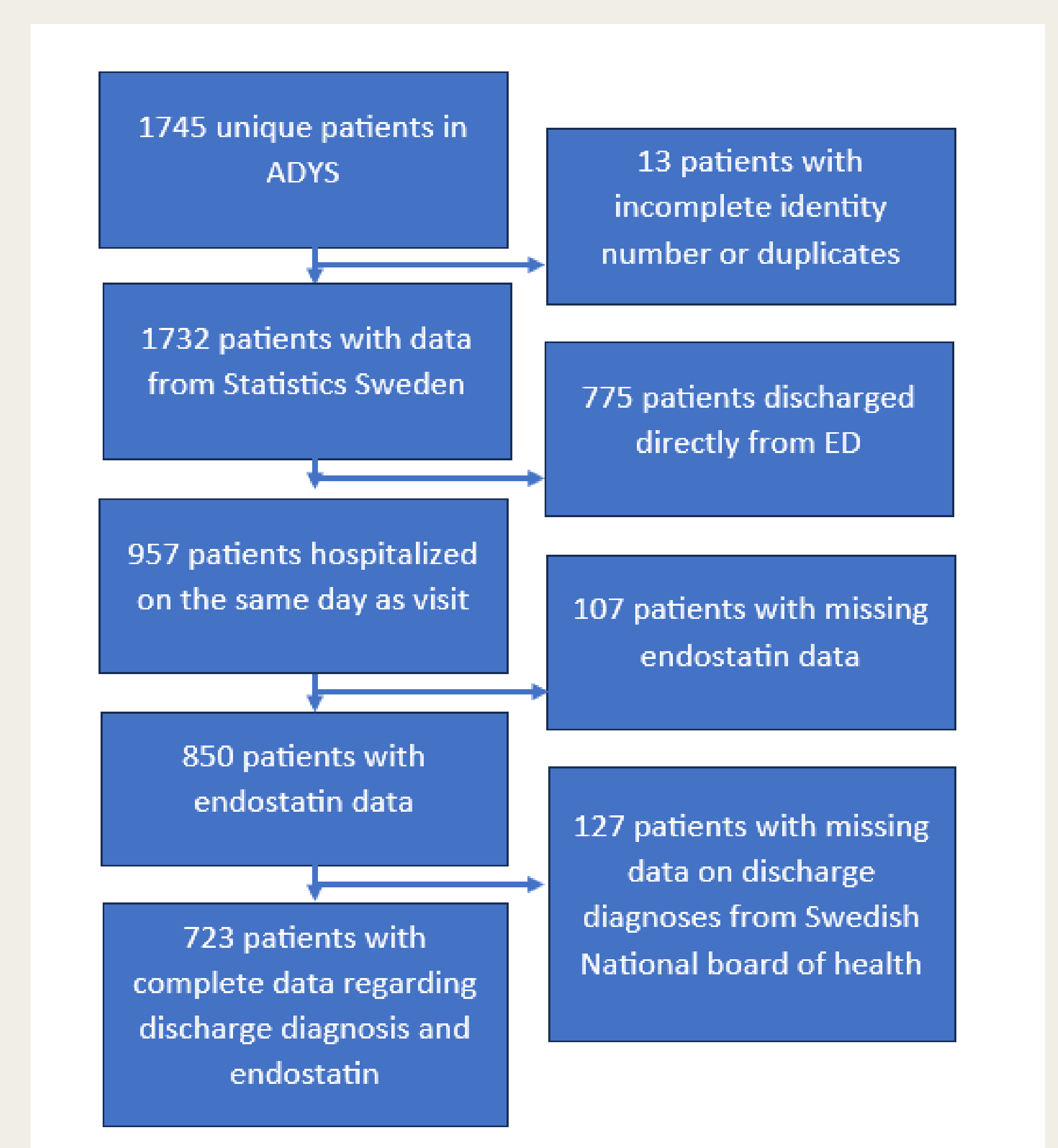
Patients with prior CHF had higher endostatin levels compared with those without CHF (median 79.0 [IQR 60.6–110.6] vs 56.9 [IQR 41.0–74.9] ng/mL). They also exhibited higher short-term mortality. In fully adjusted Cox regression analyses, endostatin was independently associated with increased risk of 3-month all-cause mortality (HR 1.008 per 1 ng/mL increase; 95% CI 1.00–1.02; $p=0.016$). No significant association was observed between endostatin and 1-month mortality.

Higher endostatin levels in CHF

Median (IQR), ng/mL
Prior/present CHF: 79.0 (60.6–110.6)
No CHF: 56.9 (41.0–74.9)



Model A (Endostatin ng/ml, age, gender;); **Model B** (Model A + smoking); **Model C** (Model B + diabetes); **Model D** (Model C + HT+CAD+AF); **Model E** (Model D + eGFR ml/min); **Model F** (Model E + NTproBNP ng/ml)



Flow chart of cohort

Discussion

Elevated endostatin was associated with increased 3-month mortality, especially in patients with CHF. The absence of association with 1-month mortality suggests that endostatin reflects longer-term risk rather than acute severity. While promising for risk stratification, the modest effect size requires validation in external cohorts.

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