

High-sensitivity cardiac troponin T is associated with future exacerbation of COPD

Neukamm A^{1,2}, Søyseth V^{1,2}, Einvik G^{1,2}, Holmedahl NH³, Kononova N^{1,2}, Berg AM^{1,2}, Høiseith AD¹, Omland T^{1,2}

¹Division of Medicine, Akershus University Hospital, Lørenskog, Norway

²Center for Heart Failure Research, Institute of Clinical Medicine, University of Oslo, Oslo, Norway

³LHL-klinikkene, Glittre, Hakadal, Norway



INTRODUCTION

Cardiac troponin elevation, indicating myocardial injury, is associated with increased mortality in patients with acute exacerbation of chronic obstructive pulmonary disease (AECOPD).

The prognostic value of circulating cardiac troponin T (cTnT) for future AECOPD hospitalization among stable COPD patients has not been described previously.

AIMS

To evaluate the prognostic value of cTnT for future hospitalization for AECOPD in patients with stable COPD.

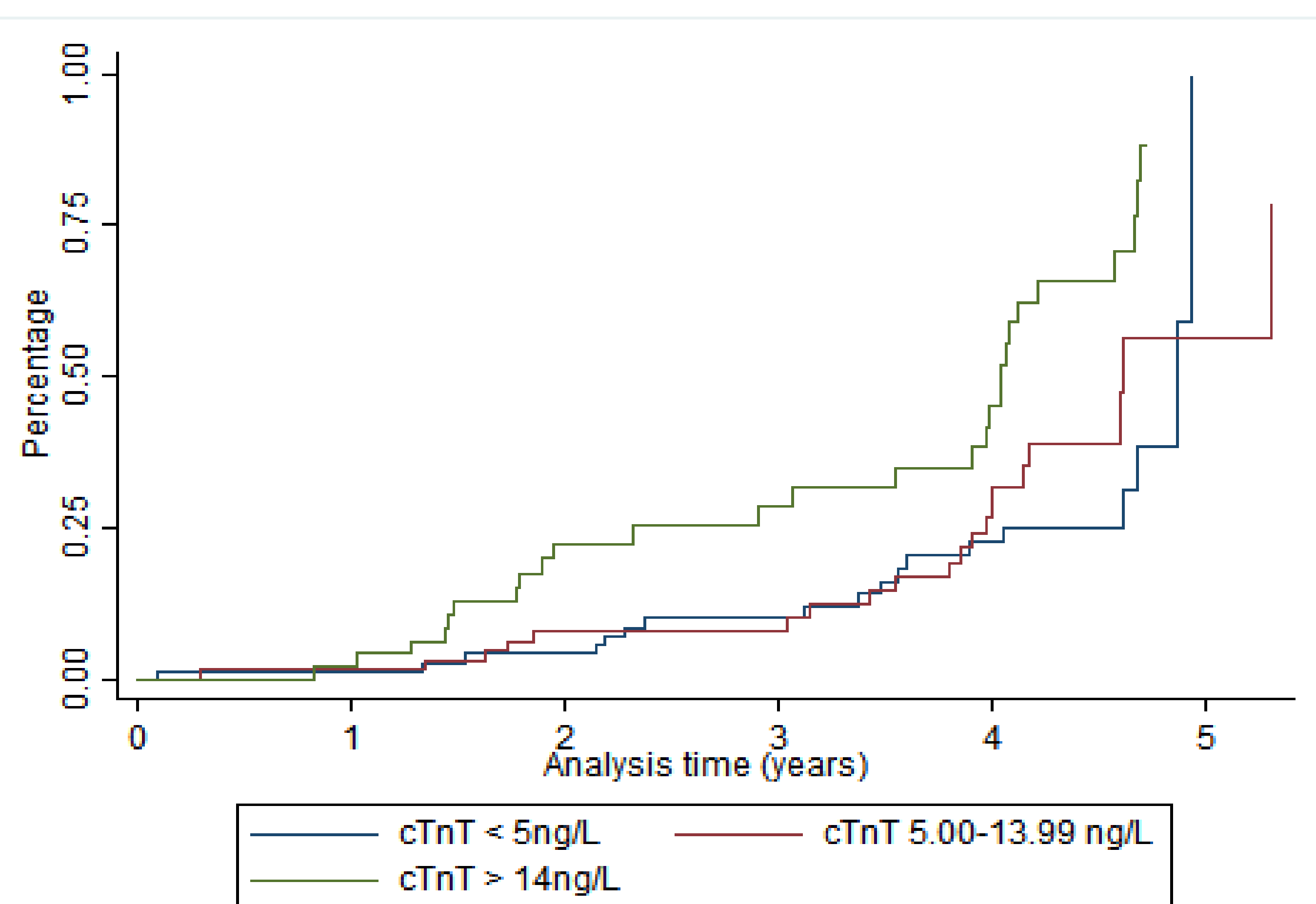


Figure 1: Cumulative events (AECOPD hospitalization) by cTnT level.

METHODS

196 patients with stable COPD without prior diagnosis of cardiovascular disease from the Akershus University Hospital's outpatient clinic and from Glittre, a pulmonary rehabilitation clinic.

cTnT-concentration assessed by a high-sensitive assay, and characteristics of COPD-severity at baseline. Subsequent hospitalization (yes/no) recorded from hospital records.

RESULTS

Mean follow-up of 2.7 years, 65 patients (33%) with at least one hospitalization for AECOPD. 147 patients (75%) with measurable cTnT (>5ng/L) and 49 patients (25%) with cTnT above the normal range (≥ 14.0 ng/L).

Table 1: Crude rates and rate ratio for future AECOPD exacerbation

Covariate	Crude rate	RR	p-value *	
			unadjusted	adjusted **
cTnT		1.7	<0.001	0.002
<5ng/L	7.0			
5.00-13.99ng/L	8.9			
≥ 14 ng/L	19.2			

* Log rank test; **Adjusted for age; RR, rate ratio

In cox regression analysis, one ln increase of baseline cTnT was associated with a hazard ratio (95% confidence intervals) of 1.5 (1.13-2.06) for future AECOPD hospitalization.

Table 2: HR for AECOPD and the corresponding 95% CI

Variable	HR	95% CI
ln cTnT, ng/L	1.5	1.13-2.06
Age		
<62	1	
62-67	1.5	0.68 - 3.11
>67	2.0	0.89 - 3.87
GOLD III/IV, yes vs no	1.4	0.78 - 2.49
6MWD <450 m, yes vs no	2.3	1.27 - 4.10

GOLD, The Global Initiative for Chronic Obstructive Lung Disease; 6MWD, six-minute walking distance; HR, hazard ratio; CI, confidence interval.

CONCLUSION

cTnT elevation is frequently present in outpatients with stable COPD and associated with increased risk for future hospitalization for AECOPD.

Further analyses are necessary to assess the association between cTnT, the number of AECOPD, cardio-vascular events and time to future AECOPD.



LHL-klinikkene
Glittre



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