The Official Journal of the Italian Society for the Study of Hemostasis and Thrombosis
SISET
Società Italiana per lo Studio dell'Emostasi e della Trombosi
Corso Nazionale SISET
Bergamo | 23-25 ottobre 2025

29TH NATIONAL CONFERENCE OF THE ITALIAN SOCIETY FOR THE STUDY OF HEMOSTASIS AND THROMBOSIS, 2025

ABSTRACT N. PO11

NEUTROPHIL CATHEPSIN G AND RISK OF CARDIOVASCULAR EVENTS IN PATIENTS WITH DIABETES MELLITUS.

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Background and Aims: Type 2 diabetes mellitus (T2DM) is a major risk factor for atherosclerosis and cardiovascular events (CVEs), partly due to increased platelet activation and inflammation. Neutrophil-derived cathepsin G (CatG), a prothrombotic protease, may play a role in this process by promoting platelet aggregation. However, its association with CVEs in T2DM has not been previously explored. This study aimed to evaluate whether circulating CatG levels independently predict CVEs in patients with T2DM.

Methods: We included 485 T2DM patients from two prospective cohorts (PLINIO and ATHERO-AF). The primary outcome was a composite of cardiovascular death, non-fatal coronary and cerebrovascular events, and peripheral artery events. Multivariate Cox-regression was used to assess associations between CatG (≥ 3.06 ng/mL) and outcomes. A subgroup analysis was conducted in 302 patients with available neutrophil count data.

Results: During the follow-up yielding for 2,437.6 person-years, 86 CVEs occurred. Patients developing CVEs ha higher catG (2.9 [1.9–4.4] ng/mL vs. 2.1 [1.6–2.6] ng/mL; $p < 0.001$) compared to CVEs-free patients. CatG ≥ 3.06 ng/mL levels were significantly associated with increased CVEs risk (adjusted Hazard Ratio (aHR) 7.203, $p<0.001$), and with secondary outcomes including cardiovascular mortality or non-fatal coronary events or all-cause mortality: this association with CVEs remained significant after adjustment for neutrophil count (aHR 5.301, $p<0.001$). Neutrophil count was also independently associated with CVEs (aHR 1.173, $p=0.042$).

Conclusions: Circulating CatG is an independent predictor of cardiovascular events in T2DM, suggesting a novel biomarker linking inflammation with athero-thrombosis.

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