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ABSTRACT N. PO58

GENDER DIFFERENCES IN PRIMARY HAEMOSTASIS.

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Background and Aims: Haemostasis and thrombosis in women are influenced by a complex interplay of hormonal, genetic, and environmental factors, with significant sex-specific differences in the risk of thrombotic events. Platelets play a central role in the formation of occlusive thrombi in atherosclerotic coronary arteries, and previous studies examining whether sex differences exist for platelet activation and procoagulant phenotype provided conflicting results. Based on this rationale, the aim of the study was to compare the expression of the common platelet activation markers and coagulation factors and the platelet-associated thrombin generation capacity 1) in male and female of the general population (n=368, male 40%); 2) in female younger and older than 50 yo.

Methods: Surface expression of P-selectin, aGpIIbIIIa, phosphatidylserine [PS], of coagulation factors (tissue factor [TF], TFPI, FV, FX, FXI, FXIII, ATIII) and platelet-leukocyte aggregates was assessed by whole blood flow cytometry under resting and stimulated conditions (ADP 10 microM); platelet-associated thrombin generation capacity was assessed by calibrated automated thrombinoscope (CAT assay).

Results: All markers of platelet activation did not show gender differences when assessed both under resting and stimulated conditions (M vs F, stimulated conditions: P-selectin 80%±17% vs 77±15; aGpIIbIIIa 65%±10% vs 71%±11%; platelet-monocytes aggregates 76%±13% vs 69%±23%; platelets-granulocytes aggregates 43%±13% vs 46%±19%) and were similar also in pre- and post-menopause females. A similar trend was observed for levels of platelets carrying the coagulation factors (M vs F, resting conditions: TF 2%±1% vs 2%±1%; TFPI 25%±7% vs 25%±10%; FV 68%±15% vs 62%±17%; FXI 23%±6% vs 25%±7%; FX 4±1MFI vs 4±1MFI; FXIII 5±1MFI vs 5±1MFI). PSpos- and ATIIIpos-platelets were 1.4-fold higher and 1.2-fold lower (PS 6%±2% vs 8%±3%; ATIII 26%±9% vs 23%±3%), respectively in >50 yo female without affecting platelet-associated thrombin generation capacity.

Conclusions: This study shows for the first time that the expression of platelet activation markers and the procoagulant phenotype is comparable in male and female in the general population.

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