

## 216 DOES AORTIC STENOSIS EFFECT PLATELET CLOSURE TIME AND VON WILLEBRAND FACTOR ACTIVITY?

<sup>1</sup>Ferrah Choudhary\*, <sup>2</sup>Richard Kirby, <sup>2</sup>Christina Peter, <sup>2</sup>Robert Henderson. <sup>1</sup>Nottingham City Hospital; <sup>2</sup>Nottingham University Hospitals NHS Trust; \*Presenting Author

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**Background** Abnormal platelet function is associated with increased bleeding risk. Limited evidence suggests that platelet dysfunction is a cause of bleeding in patients with aortic stenosis (AS).

**Method** 40 patients with degenerative AS underwent detailed haematological assessment. Platelet closure time (PCT) in seconds, was measured from a citrated blood sample by a PFA 100 benchtop analyser. In the presence of standardized flow conditions and collagen and ADP agonists, high shear rates are created, leading to aggregation of platelets and subsequent occlusion at the aperture site. The PCT is recorded as the time taken for the aperture occlusion to develop. Mean platelet volume (MPV) and platelet count (as per the impedance method) were measured from an EDTA sample by a XE2100 analyser. Von Willebrand factor activity was assessed with collagen binding assay (vWF:CB). Each patient completed a questionnaire to document use of antiplatelet therapy (with aspirin/clopidogrel) and bleeding events (using the ISTH bleeding questionnaire).

**Results** Of the 40 patients, 8 had mild AS, 23 moderate AS and 9 severe AS. The average age was 74.9 years (range 39–97) and 47.5% were male. All patients had a normal MPV. A low platelet count was noted in 3 patients and all had an associated prolonged PCT. VWF activity was abnormal in 60% (n = 24: 5 mild AS, 12 moderate, 7 severe) but there was no correlation with AS severity.

Overall, 25 patients (62.5%) had a prolonged PCT, including 5 patients (1 mild AS, 1 moderate AS and 3 severe AS) with significant bleeding events (2 patients with gastrointestinal bleeding and 3 with epistaxis). All bleeding events occurred within 3 months of the haematological assessment and in 2 cases were ongoing when the patient completed the questionnaire. Only 1 patient with normal PCT had significant bleeding. A higher PCT was associated with more severe AS (p = 0.002, Table 1) and with the use of antiplatelet therapy (p = 0.043). Patients without antiplatelet therapy (n = 18) had a mean PCT of 126.5 (SD 36.94) vs patients on antiplatelet therapy, mean PCT of 174.5 (SD 82.15). There was no statistically significant relationship between PCT and vWF activity (p = 0.16).

Abstract 216 Table 1

Severity of AS	Mild	Moderate	Severe
Number of Patients	8	23	9
Presence of Anaemia (% and range)	25% (109–118 g/L)	39.1% (90–126 g/L)	33% (75–127 g/L)
Platelet Closure Time in seconds (mean and SD)	163.75 SD 72.84	109.5 SD=25.13	215.44 SD 81.80
Prolonged Closure Times (%)	50%	52.2%	100%
Antiplatelet Use in Patients with Prolonged CT (%)	50%	41.7%	77.8%
Abnormal vWF:CB assay (%)	50%	63.6%	55.6%

\*Reference ranges: Normal Hb levels in women = 115–165 g/L and in men = 130–180 g/L. PFA closure times with collagen/ADP = 71–106 s

**Conclusion** This study demonstrates that PCT is associated with AS severity but this association may be partly explained by an excess of antiplatelet therapy use in patients with severe AS. In this small sample there was no association between platelet closure time and abnormal vWF activity. Ongoing studies will explore these findings in greater detail.

## 217 DIFFERENCES IN BLOOD BIOMARKER COMPOSITION BETWEEN PAROXYSMAL AF AND SINUS RHYTHM PATIENTS, WITHOUT HEART FAILURE

<sup>1</sup>Samantha Tull\*, <sup>2</sup>Elton Dudink, <sup>3</sup>Bob Weijs, <sup>4</sup>Syeda Nashitha Kabir, <sup>4</sup>Larissa Fabritz, <sup>5</sup>Harry J Crijns, <sup>4</sup>Paulus Kirchhof. <sup>1</sup>University of Birmingham; <sup>2</sup>MUMC, Department of Cardiology; <sup>3</sup>Maastricht University Medical Center; <sup>4</sup>Institute of Cardiovascular Sciences, University of Birmingham; <sup>5</sup>Maastricht University Medical Center Department of Cardiology, Cardiovascular Research Institute; \*Presenting Author

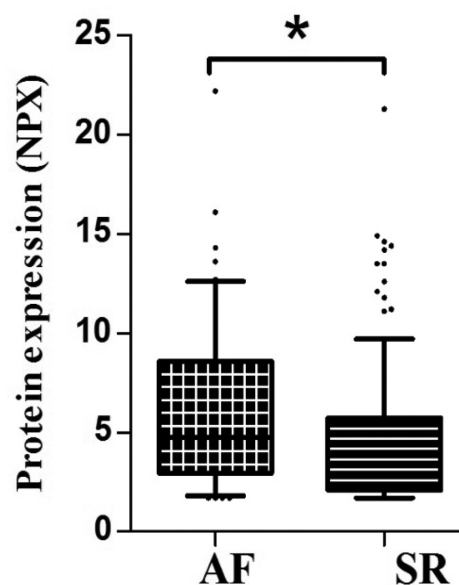
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**Introduction** Atrial fibrillation (AF) affects 2% of the population and is associated with cardiovascular disease and increased stroke and mortality rates. The myocardium releases proteins (SCF, VEGF-D and BNP). Detection of such markers in blood could be used to differentiate specific types of AF, or to guide screening for silent, undiagnosed AF.

**Aim** To identify plasma proteins discerning between patients with and without AF.

**Methods** We studied blood from consecutive patients undergoing CT coronary angiography at Maastricht Medical center. We only enrolled patients without a history of stroke, hypertension, diabetes or heart failure. Using unique DNA-coupled paired antibodies and qPCR, we simultaneously analysed 92 plasma proteins. CCL21 protein was measured by ELISA (n = 240). Stats: Mann-Whitney test, mean normalized protein expression (NPX) +/-SEM.

**Results** 176 patients (paroxysmal AF=50, sinus rhythm (SR) controls=126) were analysed. Mean age was 54 years in both groups. N-terminus terminal fragment proB-type natriuretic peptide



Box and whisker graph with median (line), interquartile range (box) and 10-90% (whiskers)

Abstract 217 Figure 1 Plasma NT-pro-BNP