

Computational investigation in the aorta of children with Turner syndrome

Lauren Johnston (1), Ruth Allen (2), Pauline Hall-Barrientos (2), Avril Mason (2), Asimina Kazakidi (1)

(1) UNIVERSITY OF STRATHCLYDE (2) QUEEN ELIZABETH UNIVERSITY HOSPITAL

The aortic arch has complex flow dynamics, with locations of arterial curvature and bifurcation known to be prone to endothelial dysfunction one of the early biological markers for atherosclerotic lesions that underlie most cardiovascular disease. This is particularly relevant to conditions of obesity, which is believed to accelerate the initiation and progression of vascular changes. A computational investigation found morphological differences between the patient-specific geometries to have a strong effect on the haemodynamic environment, and low wall shear stress at areas where atherosclerotic lesions have been suggested to develop preferentially.

Keywords: aortic arch, flow dynamics, cardiovascular disease, children, Turner syndrome

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