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4.6 INFLAMMATION AND AORTIC STIFFNESS. A MULTICENTRE LONGITUDINAL STUDY IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE

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Background: Inflammatory Bowel Disease (IBD) is characterized by a low prevalence of traditional risk factors, an increased aortic pulse-wave velocity (aPWV) [1] and an excess of cardiovascular events. We have previously hypothesized that the difference between expected and observed cardiovascular risk could be explained by chronic inflammation [2]. In this multi-centre longitudinal study, we tested the hypothesis that increased aPWV is reversible with anti-tumor necrosis factor-alpha (anti-TNFα) therapy.

Methods: We enrolled 334 patients (82 patients with ulcerative colitis [UC], 85 patients with Crohn’s disease [CD] and 167 healthy control subjects matched for age, sex and mean blood pressure) from 3 Centres in Europe and followed them up for 4 years (range 2.5–5.7 years).

Results: At baseline, IBD patients had higher aPWV than controls. IBD patients in remission and those treated with anti-TNFα therapy had lower aPWV compared to those with active disease (Figure 1, P < 0.02) and, in UC patients, the increase in CRP during follow-up (P = 0.01). Disease duration corrected for heart rate [AIx@75] was used to assess aortic hemodynamics. 

Conclusions: Anti-TNFα therapy reduced aPWV, an established surrogate measure of cardiovascular risk, in patients with IBD. This suggests that effective control of inflammation may reduce cardiovascular risk in these patients.

References

4.7 THE EFFECT OF TRANSCATHETER AORTIC VALVE IMPLANTATION ON AORTIC STIFFNESS AND HEMODYNAMICS

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Purpose/Background/Objectives: Aortic stiffness and central hemodynamics are established vascular biomarkers. Transcatheter aortic valve implantation (TAVI) is a promising new technique for the treatment of aortic valve stenosis in elderly patients. We examined the effect of TAVI on the elastic properties of the aorta and on central hemodynamics.

Methods: We included fifty patients (mean age 80.7 ± 8.3 years, 27 male) with symptomatic aortic stenosis treated by TAVI. In measurements prior and acutely after the procedure, carotid-femoral pulse wave velocity (cfPWV) and brachial-ankle pulse wave velocity (baPWV) were used as indicators of arterial stiffness. 

Conclusions: Our study led to the observation that patients undergoing TAVI present with an increase in arterial stiffness in the acute phase after the procedure, accompanied by an improvement of wave reflections. At the same time, a dissociation between aortic and peripheral BP after TAVI was observed, which may indicate important clinical value.

Abstracts