

## MP4-10

### **Aortic angle predicts neo-aortic root dilatation and regurgitation following arterial switch operation**

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**Introduction:** Neo-aortic root dilatation and regurgitation are common progressive long-term complications of the arterial switch operation (ASO) for transposition of the great arteries (TGA) with increasing clinical burden. While several risk factors have been identified, most are constitutional. The acute aortic angle commonly seen after ASO might alter aortic dynamics and facilitate progression of the neo-aortic root dilatation and aortic regurgitation, but insufficient data is available.

**Methods:** Retrospective analysis of TGA patients undergoing CMR after ASO at a single tertiary center from November 2010 to July 2017.

**Results:** 180 patients were analyzed, 157 of which having adequate imaging of the aortic arch and root. Neo-aortic root Z score was normally distributed with 73% of patients having a Z score >2. The aortic angle had a significant ( $p < 0,001$ ) inverse relationship with the neo-aortic root Z score both in univariate and multivariate linear regression. Other significant predictors were male gender and the concomitant presence of a VSD or a dysplastic neo-aortic valve. The presence of neo-aortic regurgitation was also inversely correlated with the aortic angle in both univariate and multivariate logistic regression, with other significant predictors being the presence of a VSD or a bicuspid neo-aortic valve.

**Conclusions:** Acute aortic angles predict more extensive neo-aortic root dilatation and higher incidence of regurgitation. We believe a surgical technique promoting less acute aortic angles has potential for ameliorating the long-term outcomes of TGA.