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Is pregnancy a risk factor for aortic complications in Marfan syndrome?

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Introduction: Marfan syndrome (MFS) is a pleiotropic disease affecting the skeletal, ocular and cardiovascular organ systems. The cardinal cardiovascular complication is progressive aortic root (AoR) dilatation, entailing a risk for aortic dissection. Whether pregnancy leads to excessive AoR growth or triggers dissection in MFS women under surveillance is unclear.

Objective: we aimed to study AoR growth and the incidence of aortic dissection during pregnancy and during follow up in our MFS patient population.

Methods: we selected all women with molecularly confirmed MFS who had been pregnant between Nov 2011 and June 2015. We retrospectively collected demographic, clinical and echocardiographic data of these patients before and during pregnancy and during follow up. Furthermore we selected a matched group of nulliparous MFS women to analyse aortic root growth during follow up.

Results: there were thirty-seven women aged 20-45years at the moment of the study. Fifteen pregnancies took place in eleven patients. Mean AoR diameter before pregnancy was 36,19mm (IC 95% 32,85-39,53mm); z-score: 2,27 (IC 95% 0,31-4,23). One woman had previously undergone prophylactic AoR replacement. Six women received beta-blockers throughout eight pregnancies. There were no type A or type B aortic dissections in our cohort. There was a non-significant AoR growth during pregnancy (AoR diameter before pregnancy: 36,5mm vs 38,14mm after pregnancy; p=0,157). When compared to the matched nulliparous group, the parous cohort showed a significantly faster AoR growth rate (0,96 vs 0,05mm/yr; p=0,002) during follow up (mean: 5,29 years- IC 95% 1,63-8,95years).

Conclusions: Pregnancy seems to be safe in terms of risk for aortic dissection in patients with MFS who are under surveillance but can affect AoR growth on the long term. Our study however was retrospective in a limited number of patients. Effect of multiple pregnancies and safety of pregnancy after AoR replacement could therefore not been addressed.