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A systematic review for the effectiveness of angiotensin receptor blockers vs. beta-blockers in the management of aortic root dilation in paediatric Marfan syndrome

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Marfan syndrome is a rare inherited connective tissue autosomal dominant disease. The vast majority of the affected population will develop cardiovascular complications, with aortic-root dissection being the leading cause of the death in this cohort. It also leads to premature death, with 50% mortality in adulthood if left untreated. Currently, beta-blockers are the standard therapy used in the management of aortic root dilation in Marfan's syndrome, as it has been shown to decrease the rate of the dilation. Within the last decade a number of studies have began to assess the effectiveness of angiotensin – II receptor blockers (Arb) vs. beta-blockers in the management of aortic root dilation in Marfan syndrome. The aim of this systematic review is to examine the use of Arb vs. Beta-blockers in the management of aortic root dilation in pediatric patients with Marfan syndrome. Four main databases were used for the article search – Cochrane, Medline, PubMed and EMBASE, using the following terms: "Aortic dilation", or "aorticpathology", or "aortic coarct", and "marfan", or "Marfan syndrome", and beta-blockers, or b-blockers, or adrenergic beta antagonist, and arb, or angiotensin receptor blocker, or angiotensin-II receptor blocker. The primary outcome was defined as the normalised rates of aortic dimensions before treatment initiation compared with follow-up measurements after treatment initiation (z-score). A total of 7 studies were identified, out of which only 3 have published results and were included in the review. Two of the studies which compared the combination of beta-blockers and Arbs vs. beta-blockers alone, showed inconsistent results. The 3rd study, which compared Arbs vs. beta-blockers alone, revealed that the prophylactic use of either medication had a similar effect in both groups. Currently the evidence suggests that Arb and beta-blockers slow down the progression of aortic root dilations. However, more randomised control trials are needed in order to draw clear conclusions on whether Arbs are more effective than beta-blockers in the management of aortic root dilation in pediatric Marfan syndrome.

Biography

Natasa Chrysodonta has completed a medical degree in the University of Bristol, and a BSc in Medical Sciences and management in Imperial College London. Currently she is a foundation year acute medicine doctor at Hinchingbrooke Hospital in Cambridgeshire.

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