Effect of Beta-Blockers on Progressive Aortic Dilatation in Patients with Marfan Syndrome

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BACKGROUND

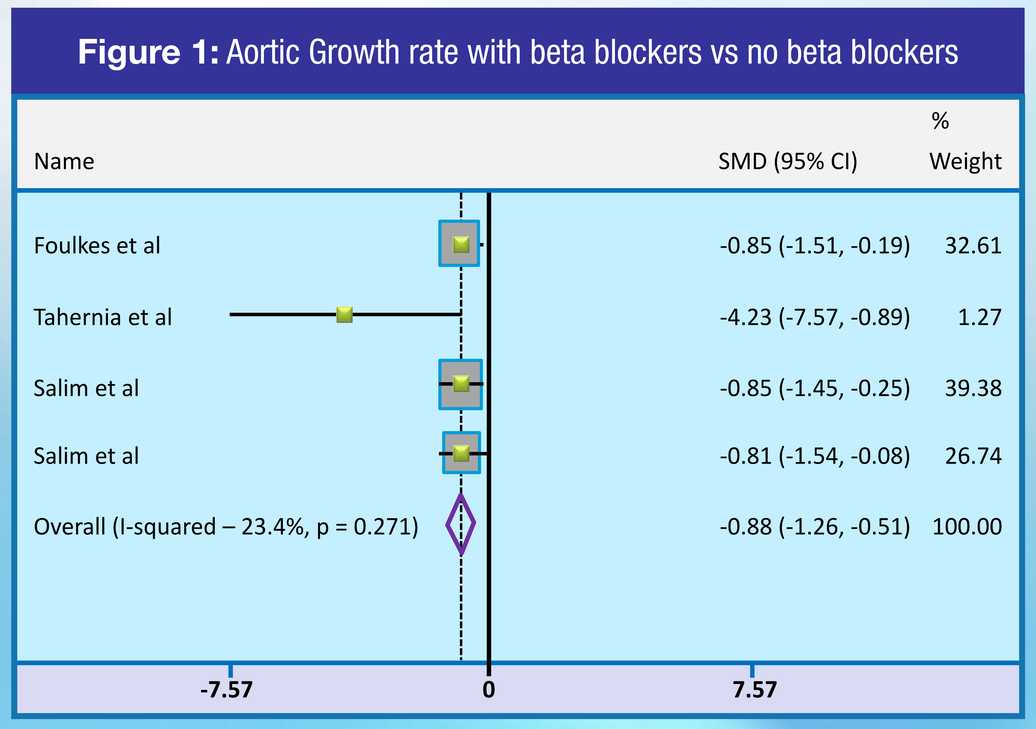
- Marfan syndrome is a multi-systemic connective tissue disorder caused by a fibrillin-1 mutation. The objective of our study was to determine the effect of beta-blockers on aortic dilatation progression in patients with Marfan syndrome.

METHODS

- We performed a systematic review of all prospective trials that evaluated the efficacy of beta-blockers in patients with Marfan syndrome.
- Primary outcome of the study included echocardiographic measures of aortic root at sinus of valsalva in patients treated and untreated with beta-blockers.
- Secondary outcomes included mortality, aortic dissection, and surgical repair between the two groups.

RESULTS

Figure 1: Aortic Growth rate with beta blockers vs no beta blockers



- Four prospective trials were identified with comparable groups, 174 patients were included for analysis. Mean age was 10.6 years.
- Compared to control (non beta-blocker group), beta-blockers significantly decreased the rate of aortic dilatation (OR -0.88, 95% CI -1.26- -0.51, p <0.001).
- However, the final aortic size was the same despite the use of beta-blocker.

RESULTS (continued)

Interestingly, there was also no statistical significant difference in secondary outcome in the beta-blocker group when compared with no beta- blocker treatment group (OR = 5.88, 95% CI 0.70-49.26).

CONCLUSION

This meta-analysis demonstrates that although beta-blockers were effective in aortic root growth rate reduction in patients with Marfan syndrome, the secondary outcomes i.e. the rate of dissection and final aortic size were the same regardless of beta-blocker usage.

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