THROMBOEMBOLISM PROPHYLAXIS IN FONTAN PATIENTS. WHAT SHOULD WE USE? A META-ANALYSIS OF PUBLISHED TRIALS

Poster Contributions
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Background: The role of anti-platelets and anticoagulation in patients who underwent the Fontan procedure remains controversial. While most authors agree on the need for prophylaxis to prevent thromboembolic (TE) events, there is still lack of strong evidence to support such approach and the best agent that provide the best protection.

Methods: We conducted a meta-analysis of published trials that studied the role of using TE prophylaxis in patients who underwent the Fontan procedure. We searched PubMed and the Cochrane Library for trials published in English language. Both randomized trials as well as registries were included. We identified 11 studies with a total number of 2275 patients with an average follow-up time of 7.1 years.

Results: Our analysis showed clear advantage of using TE prophylaxis (aspirin or warfarin) in preventing TE in patient with fontan compared to no prophylaxis (OR: 0.425. 95% CI: 0.194-0.929. P<0.01 and I²= 37%). There was a significant advantage to aspirin over no TE prophylaxis (OR: 0.363. 95% CI: 0.177-0.744. P<0.01 and I²=0%) as well as to warfarin over no TE prophylaxis (OR: 0.327. 95% CI: 0.168-0.634. P<0.01 and I²=2.5%). There was however no significant difference between warfarin and aspirin in preventing TE (OR: 0.936. 95% CI: 0.609-1.438. P=0.54. I²=0%). When only new type Fontan technique (total cavo-pulmonary connection) was included, there was again no significant advantage to warfarin over aspirin (OR: 0.813. 95% CI: 0.471-1.401. P: 0.34. I²=11%). Furthermore, There was no significant advantage to warfarin over aspirin in preventing early (within 6 months of the operation) (OR: 0.784. 95% CI: 0.310-1.982. P=0.37. I²=8%) and late (>6 months) TE events (OR: 0.776. 95% CI: 0.249-2.42. P=0.3. I²=45%).

Conclusion: In our meta-analysis, we showed a clear benefit of using TE prophylaxis (with aspirin or warfarin) to prevent TE events in patients after fontan procedure. Our data suggests no significant benefit of warfarin when compared to aspirin in preventing early and late TE events in all type of fontan operations as well as in the newer fontan type techniques. Large randomized controlled trials are needed to confirm these results.