We read with great interest the article by Hiroshi Kawano et al. titled ‘Tricuspid valve replacement with the St. Jude Medical valve: 19 years of experience’ [1]. We have 10 years experience on 67 patients with monolea†et tilting disc prostheses (Björk–Shiley type) in tricuspid position. The mean follow-up was 5.9 years/patient; the total follow-up was 294 patient-years. Tricuspid valve thrombosis occurred in four patients, nine events. The valve thrombosis rate was 3.1% patient-years. The incidence of thrombosis for mitral valve prostheses was 0.6% patient-years in the same group of patients [2]. It is no doubt that inadequate anticoagulant therapy plays an important role in the thrombosis of tricuspid prostheses, but this can occur even by adequate anticoagulation. We disagree with the explanation by the authors that accordingly higher thrombogenicity of the tricuspid prostheses are due to lower pressures in the right side of the heart. The cardiac output is the same in both sides of the heart. The blood flow has this washing effect during diastole, when the pressure gradients between the atria and ventricles are quite similar. There is not any more blood flow and washing effect during systole, when the pressure is increasing in the left ventricle and the prosthetic valves in AV-position are closed.

The higher occurrence of thrombosis of mechanical prostheses in the tricuspid position could be explained by the difference of prostacyclin (PGI2) levels in arterial and venous blood [3]. Prostacyclin is a powerful inhibitor of platelet aggregation. Prostacyclin even causes the disaggregation of the platelet [4]. The lungs produce high amount of prostacyclin [3]. That can be an explanation why prostheses thrombosis occurs in the tricuspid valve prostheses, but not in the mitral valve prostheses in the same patient.

We suggest adding platelet-aggregation inhibitor treatment (dipiramydole, aspirin or ticlopidin) to the anticoagulant therapy, instead of a higher level of anticoagulant therapy in the patients with mechanical prostheses in the tricuspid position [2]. Dypiramidole increases even the prostacyclin production in the lungs.

We partly agree with the authors that it is better to use biological prostheses in the tricuspid position, if it is not possible to do a tricuspid valve repair. We recommend mechanical valves in special cases in young patients, but in this case the normal anticoagulant therapy (INR 3.0–4.0) should be completed with platelet-aggregation inhibitor therapy instead of increasing the level of anticoagulation causing higher incidence of bleeding.

References


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