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CLINICAL RESEARCH

Could anticoagulation avoid bioprosthesis subclinical thrombosis in patients undergoing transcatheter aortic valve replacement?

Le traitement anticoagulant permettrait-il d'éviter la thrombose infra-clinique des bioprothèses aortiques implantées par voie percutanée ?

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KEYWORDS
Transcatheter aortic valve implantation;
Aortic stenosis;
Antithrombotic agents;
Thrombosis;
Bleeding

Summary
Background. — Despite a lack of clear evidence, current European guidelines recommend antiplatelet therapy after transcatheter aortic valve replacement (TAVR). Recent investigations suggest that bioprosthesis thrombosis after TAVR is not uncommon and may be prevented by anticoagulation, but not by antiplatelet therapy.
Aims. — The study objective was to assess the impact of the antithrombotic regimen on post-TAVR early haemodynamics.
Methods. — Patients eligible for TAVR with an Edwards SAPIEN 3 valve were included in this prospective observational study. Patients undergoing long-term anticoagulation before

Abbreviations: AF, atrial fibrillation; DAPT, dual antiplatelet therapy; LVEF, left ventricular ejection fraction; NOAC, non-vitamin K oral anticoagulant; NYHA, New York Heart Association; PCI, percutaneous coronary intervention; TAVR, trancatheter aortic valve replacement; VARC, Valve Academic Research Consortium; VKA, vitamin K antagonist.

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TAVR continued their treatment, whereas previously non-anticoagulated patients received antiplatelet therapy. The primary endpoint was the mean transaortic gradient assessed by transthoracic echocardiography at the first post-TAVR follow-up. Safety was assessed by two composite endpoints: bleeding/vascular complications and major adverse postoperative events.

Results. — Among 135 included patients, 78 were discharged on antiplatelet therapy and 57 on anticoagulation. Both groups had similar baseline characteristics, except for supraventricular arrhythmia (7.7% on antiplatelets vs. 89.5% on anticoagulation; $P < 0.001$). At 1—2 months after TAVR, the mean transaortic gradient was significantly higher in the antiplatelet therapy group versus the anticoagulation group (13.0 ± 4.0 vs. 9.0 ± 2.8 mmHg; $P < 0.001$, independently of prosthesis size). Safety analyses showed no significant differences of the composite endpoints.

Conclusion. — Prolonged anticoagulation after TAVR was associated with lower early transaortic gradients than antiplatelet therapy. Anticoagulation treatment may limit clinical and subclinical thrombosis without increasing early postoperative complications.

MOTS CLÉS
TAVI ;
Rétrécissement aortique ;
Traitements antithrombotiques ;
Thrombose ;
Saignement

Résumé

Contexte. — Malgré le manque de preuves, un traitement antiagrégant plaquettaire est actuellement recommandé après remplacement valvulaire aortique percutané (TAVI). Plusieurs publications suggèrent une incidence élevée de thromboses de prothèses TAVI, qui pourraient régresser sous anticoagulation.

Objectifs. — Étudier l'impact du traitement antithrombotique sur l'évolution de l'hémodynamique valvulaire.

Méthodes. — Les patients recevant un TAVI par prothèse Edwards SAPIEN 3 étaient inclus prospectivement dans cette étude monocentrique observationnelle. Ceux recevant une anticoagulation au long cours avant le TAVI poursuivaient leur traitement, alors que les patients non anticoagulés recevaient une bi-anti-agrégation plaquettaire à la sortie de l'hôpital. Le critère de jugement principal était le gradient transaortique moyen déterminé par échocardiographie transthoracique au trentième jour postopératoire. La sécurité de chaque thérapie était évaluée par deux critères composites : complications hémorragiques ; évènements postopératoires majeurs.

Résultats. — Parmi les 135 patients inclus, 78 recevaient une anti-agrégation plaquettaire et 57 une anticoagulation. Les groupes étaient similaires en termes de caractéristiques préopératoires hormis l'antécédent d'arythmie supraventriculaire. Au trentième jour, le gradient transaortique moyen avait significativement augmenté chez les patients sous antiagrégants alors qu'il restait stable chez les patients anticoagulés (13 ± 4 vs 9 ± 3 mmHg ; $p < 0{,}001$, indépendamment de la taille de la prothèse). Les analyses de sécurité ne montraient pas de différence sur les critères composites.

Conclusions. — Dans les suites d'une intervention de TAVI, les gradients transvalvulaires étaient moins élevés chez les patients sous anticoagulants que chez ceux sous antiagrégants plaquettaires. L'anticoagulation pourrait limiter la survenue de thromboses, cliniques ou infracliniques, sans augmenter les complications postopératoires précoces.

Background

Transcatheter aortic valve replacement (TAVR) is growing in popularity worldwide as an efficient and safe procedure for the treatment of severe aortic valve stenosis. European guidelines [1] support its use in severe symptomatic patients who are considered unsuitable for surgery. However, postoperative severe bleeding has been described as a major determinant of mortality in TAVR patients [2], and cerebrovascular thrombotic events were more frequent than with standard therapy in a randomized study [3]. The rationale for antiplatelet therapy after the procedure was initially due to a balance between cerebrovascular ischaemic event prevention and bleeding avoidance. However, after almost 10 years of practice and more than 300,000 procedures worldwide, no clear data are available on the ideal antithrombotic regimen after TAVR. Several studies have investigated the role of antiplatelet therapy,

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