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Comparative efficacy and safety of warfarin care bundles and novel oral anticoagulants in patients with atrial fibrillation: a systematic review and network meta-analysis

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Warfarin care bundles (e.g. genotype-guided warfarin dosing, patient's self-testing [PST] or patient's self-management [PSM] and left atrial appendage closure) are based on the concept of combining several interventions to improve anticoagulation care. NOACs are also introduced for stroke prevention in atrial fibrillation (SPAF). However, these interventions have not been compared in head-to-head trials yet. We did a network meta-analysis based on a systematic review of randomized controlled trials comparing anticoagulant interventions for SPAF. Studies comparing these interventions in adults, whether administered alone or as care bundles were included in the analyses. The primary efficacy outcome was stroke and the primary safety outcome was major bleeding. Thirty-seven studies, involving 100,142 patients were assessed. Compared to usual care, PSM significantly reduced the risk of stroke (risk ratio [RR] 0.24, 95% CI 0.08–0.68). For major bleeding, edoxaban 60 mg (0.80, 0.71–0.90), edoxaban 30 mg (0.48, 0.42–0.56), and dabigatran 110 mg (0.81, 0.71–0.94) significantly reduced the risk of major bleeding compared with usual warfarin care. Cluster rank plot incorporating stroke and major bleeding outcomes indicates that some warfarin care bundles perform as well as NOACs. Both interventions are therefore viable options to be considered for SPAF. Additional studies including head-to-head trials and cost-effectiveness evaluation are still warranted.

For many years, warfarin has been the only effective oral anticoagulant for stroke prevention in patients with atrial fibrillation (SPAF)¹. Due to its complex pharmacodynamic and pharmacokinetic profile, constant monitoring of anticoagulation effect through international normalized ratio (INR) is required to ensure optimal level of anticoagulation. The need for frequent monitoring may result in physical, psychological, social and financial consequences for the patient and the healthcare team². Due to the perceived risks and inconvenience, warfarin remains underused³.

The concept of using more than one intervention together to improve patient care is called “a care bundle”⁴. This care bundle concept has been shown to be effective in improving patient outcomes in various disease models. Since several interventions have been shown to improve quality of anticoagulation control and outcomes,

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