Efficacy and safety of non-vitamin K oral anticoagulants in patients with atrial fibrillation and cancer

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Background. Anticoagulation in patients with cancer and atrial fibrillation (AF) is particularly challenging given the higher risk of both thrombotic and bleeding complications in this setting. Data regarding the efficacy and safety of non-vitamin K oral anticoagulants (NOACs) in AF patients with malignancy remain unclear.

Purpose. In the present meta-analysis we further investigate the efficacy and safety of NOACs compared to warfarin in patients with AF and cancer assuming that available studies may be individually underpowered for endpoints at low incidence, i.e. stroke, major and intracranial bleeding.

Methods. We performed a systematic review and meta-analysis of studies comparing the use of NOACs vs. warfarin in AF patients with cancer. Efficacy outcome measures included stroke or systemic embolism, venous thromboembolism and mortality. Safety outcome measures were major bleeding and intracranial hemorrhage.

Results. We pooled data from 6 identified studies enrolling a total of 31,756 AF patients with cancer. Mean follow-up was 1.7 years. Patients with cancer had significantly increased annualized rates of venous thromboembolism (1.38% vs. 0.74%), major bleeding (9.01% vs. 5.13%), in particular major gastrointestinal bleeding (2.38% vs. 1.60%), and all-cause mortality (17.73% vs. 8.50%) vs. those without (all P values <0.001), whereas the incidence of stroke or systemic embolism and intracranial hemorrhage did not differ. Compared with warfarin, treatment with NOACs nominally decreased the risk of stroke or systemic embolism (5.41% vs. 2.70%; odds ratio, OR; 95% confidence intervals, CI 0.51, 0.26-1.01; P=0.05; Figure), mainly of ischemic stroke (OR 0.56; 95% CI 0.35-0.89; P=0.01), and the risk of venous thromboembolism (OR 0.51; 95% CI 0.42-0.61; P<0.001). In cancer patients receiving NOACs there was a significant reduction of major bleeding (3.95% vs. 4.66%; OR 0.66, 95% CI 0.46-0.94; P=0.02; Figure) and intracranial hemorrhage (0.26% vs. 0.66%; OR 0.25, 95% CI 0.08-0.82; P=0.02) vs. warfarin, with no difference in gastrointestinal major bleeding rates.

Conclusion. AF patients on oral anticoagulation and concomitant cancer are at higher risk of venous thromboembolism, major bleeding and all-cause mortality. NOACs may represent a safer and more effective alternative to warfarin also in this setting of patients.
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Panel A. Stroke/Systemic Embolism

Panel B. Major Bleeding