

Non-vitamin K Antagonist Oral Anticoagulants in Elderly Patients With Atrial Fibrillation: A Systematic Review With Meta-Analysis and Trial Sequential Analysis

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Erratum in

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Abstract

Background: Elderly population is known to be associated with polymedication, comorbidities and altered drug pharmacokinetics. However, the most adequate oral anticoagulant, attending to its relative efficacy and safety, remains unclear.

Methods: We searched for phase III randomized controlled trials (MEDLINE, Cochrane Library, SciELO collection and Web of Science) comparing novel non-vitamin K antagonist oral anticoagulants (NOACs) with Vitamin K antagonists (VKA) in the elderly population (≥ 75 years-old) in atrial fibrillation (AF). Risk ratios (RR) were calculated using a random effects model. Trial sequential analysis (TSA) was performed in statistically significant results to evaluate whether cumulative sample size was powered.

Results: Four trials rendered data about elderly (≥ 75 years-old) and younger patients (< 75 years-old) with AF. NOACs demonstrated a 30% significant risk reduction (RR 0.70, 95% CI: 0.61 to 0.80) in elderly patients compared to VKA, without heterogeneity across studies ($I^2 = 0\%$). The TSA showed that cumulative evidence of this subgroup exceeded the minimum information size required for the risk reduction. In younger patients, VKA and NOACs shared a similar risk of stroke and systemic embolism (RR 0.97, 95% CI: 0.79 to 1.18). Regarding major bleeding risk in the elderly, the overall comparative risk of NOACs was not different from VKA (RR 0.91, 95% CI: 0.72 to 1.16; $I^2 = 86\%$).

Conclusions: NOACs reduce significantly the risk of stroke and systemic embolism in elderly patients without increasing major bleeding events. The dimension of stroke risk reduction was significantly higher in the elderly than in younger adults.

Keywords: Apixaban; DOAC; Dabigatran; Edoxaban; Elderly; Rivaroxaban.