Abstract: P4771

Novel oral anticoagulants plus antiplatelet therapy vs. vitamin K antagonists plus antiplatelet therapy in atrial fibrillation patients who underwent percutaneous coronary intervention: a meta-analysis

Authors:
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Topic(s):
Oral Anticoagulation

Citation:

Background
Atrial fibrillation (AF) patients who undergo percutaneous coronary intervention (PCI) for coronary artery disease are a therapeutic challenge. Current evidence specifies the need for antiplatelet therapy (APT) to prevent stent thrombosis, but this alone is inadequate for stroke prevention. Oral anticoagulation (OAC) is necessary for stroke prevention in AF patients, but this alone is insufficient to prevent stent thrombosis. The concurrent administration of APT with vitamin K antagonists (VKAs) is associated with increased bleeding. At present, there is limited data on the effectiveness and safety benefit of novel oral anticoagulants (NOACs) plus APT in the prevention of ischemic stroke and stent thrombosis among AF patients who undergo PCI.

Purpose
This review compared NOACs plus APT versus VKAs plus APT in preventing mortality, myocardial infarction (MI), ischemic stroke, and clinically significant bleeding among AF patients who underwent PCI.

Methods
The electronic databases MEDLINE and CENTRAL and the clinical trial databases ClinicalTrials.gov and ISRCTN registry were systematically searched in February 2019 for all published and unpublished randomized controlled trials (RCTs) comparing NOACs plus APT versus VKAs plus APT in AF patients who underwent PCI. Manual searching was done by reviewing the references of available studies. There were no language restrictions. Screening and data extraction were done using standardized forms, and evaluated independently by the authors using the Cochrane Collaboration’s tool for assessing risk of bias. Disagreements were resolved by discussion. Statistical analysis used RevMan 5.3 (The Nordic Cochrane Centre, 2014). Summary effects were expressed by risk ratios and 95% confidence intervals. Heterogeneity was assessed by visual inspection of forest plots and by I² statistic =40%.

Results
The search identified 63 records of which 60 studies were excluded (55 studies did not fulfill inclusion criteria, 1 RCT is awaiting additional data, and 4 RCTs are currently ongoing). Three studies were included in the final qualitative and quantitative synthesis. All included RCTs compared a NOAC plus single APT versus warfarin plus dual APT (aspirin and a P2Y12 inhibitor). Based on two moderate quality RCTs with a combined population of 4,820 patients, we found that NOACs plus single APT are not statistically different from warfarin plus dual APT in preventing MI, stroke, or all-cause mortality (RR 1.00, 95% CI 0.75-1.34; I²=48%) in AF patients who undergo PCI. Based on two high quality RCTs with a combined population of 4,824 patients, NOACs plus single APT are definitely superior to warfarin plus dual APT in reducing clinically significant bleeding (RR 0.66, 95% CI 0.59-0.74; I²=0%).

Conclusion
In AF patients who undergo PCI, NOACs plus single APT are as effective as warfarin plus dual APT in preventing major adverse cardiac events, but with significantly less bleeding risk.
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In AF patients who undergo PCI, NOACs plus single APT are as effective as warfarin plus dual APT in preventing major adverse cardiac events, but with significantly less bleeding risk.

**Figure 1. Forest plot of NOACs plus antiplatelet therapy versus Warfarin plus antiplatelet therapy, outcome: Composite of MI, stroke, and all-cause mortality.**

**Figure 2. Forest plot of NOACs plus antiplatelet therapy versus Warfarin plus antiplatelet therapy, outcome: Clinically relevant bleeding.**

**SUMMARY OF FINDINGS TABLE**

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Anticipated absolute effects (95% CI)</th>
<th>Risk with Warfarin</th>
<th>Risk with NOAC</th>
<th>Relative effect (95% CI)</th>
<th>No of participants (median)</th>
<th>Certainty</th>
<th>What happens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary outcome: Composite of myocardial infarction, stroke, and all-cause mortality</td>
<td>-80 per 1,000</td>
<td>80 per 1,000 (80 to 107)</td>
<td>RR 1.00 (0.73 to 1.34)</td>
<td>4820 (2 RCTs)</td>
<td>@SIG @SIG</td>
<td>MODERATE **</td>
<td>NOAC plus antiplatelet therapy likely does not reduce primary outcome: Composite of myocardial infarction, stroke, and all-cause mortality</td>
</tr>
<tr>
<td>All-cause mortality</td>
<td>-36 per 1,000</td>
<td>38 per 1,000 (28 to 52)</td>
<td>RR 1.05 (0.78 to 1.43)</td>
<td>4820 (2 RCTs)</td>
<td>@SIG @SIG</td>
<td>MODERATE **</td>
<td>NOAC plus antiplatelet therapy likely does not reduce all-cause mortality</td>
</tr>
<tr>
<td>Myocardial infarction</td>
<td>-30 per 1,000</td>
<td>33 per 1,000 (21 to 52)</td>
<td>RR 1.11 (0.70 to 1.74)</td>
<td>4820 (2 RCTs)</td>
<td>@SIG @SIG</td>
<td>MODERATE **</td>
<td>NOAC plus antiplatelet therapy likely does not reduce myocardial infarction</td>
</tr>
<tr>
<td>Stroke</td>
<td>-18 per 1,000</td>
<td>14 per 1,000 (8 to 29)</td>
<td>RR 0.77 (0.36 to 1.62)</td>
<td>4820 (2 RCTs)</td>
<td>@SIG @SIG</td>
<td>MODERATE **</td>
<td>NOAC plus antiplatelet therapy likely results in little to no difference in stroke</td>
</tr>
<tr>
<td>Clinically relevant bleeding</td>
<td>-249 per 1,000</td>
<td>164 per 1,000 (147 to 184)</td>
<td>RR 0.66 (0.40 to 0.94)</td>
<td>4824 (2 RCTs)</td>
<td>@SIG @SIG</td>
<td>HIGH</td>
<td>NOAC plus antiplatelet therapy results in reduction in clinically relevant bleeding</td>
</tr>
</tbody>
</table>