Bleeding outcome of peri-procedural anticoagulation in patients of atrial fibrillation undergoing catheter ablation: A Network Meta-analysis

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Introduction: In context of periprocedural anticoagulation for catheter ablation of atrial fibrillation (AF), interrupted warfarin strategy with Heparin bridging carries bleeding risk without significant stroke prevention in comparison to uninterrupted warfarin strategy. Different interrupted or uninterrupted novel oral anticoagulants (NOAC) strategies are compared to uninterrupted warfarin strategy in multiple studies with conflicting outcomes. No consensus of NOACs in periprocedural anticoagulation for catheter ablation of AF exists. Our objective was to draw comparison among different interrupted or uninterrupted NOACs and vitamin K antagonist (VKA) regimen in terms of bleeding complications in catheter ablation of AF.

Methods: PubMed, Embase and Cochrane databases were systematically searched for randomized controlled trials, cohort studies or case-control studies comparing different interrupted or uninterrupted NOACs and VKA regimen and total 33 studies were included for our analyses. R software using ‘pcnetmeta’ package has been utilized for pairwise analysis (Markov chain Monte Carlo methods). Confidence in Network Meta-Analysis (CINeMA) has been used for deriving the league tables and bias assessments.

Result: In pairwise analysis interrupted apixaban (Ai) [AR 0.01, 95%CI 0.00-0.02] and interrupted edoxaban (Ei) [AR 0.01, 95%CI 0.00-0.05] regimen had the lowest bleeding complications and uninterrupted edoxaban (Eu) [AR 0.09, 95%CI 0.03-0.22] had the highest (Figure, Absolute Plot). While comparison with uninterrupted VKA (Wu), all the NOACs regimen were comparable except interrupted edoxaban (Eu) which had significantly more bleeding complications [OR 0.19, 95%CI 0.03-0.67] (Figure, Contrast Plot). The estimated value of between-study variance for the network meta-analysis is 0.051 and $\hat{\theta} = 24.2\%$.

Conclusion: Available evidence suggests that interrupted apixaban strategy was associated with least bleeding complications for catheter ablation of AF.