Effectiveness and Safety of Percutaneous Left Atrial Appendage Occlusion in Cancer Patients with Atrial Fibrillation

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Background

Cancer patients with atrial fibrillation (AF) face increased thromboembolism and bleeding risks, complicating stroke prevention. While percutaneous left atrial appendage occlusion (LAAO) offers an alternative to oral anticoagulants, its effectiveness and safety in cancer patients remain uncertain.

Objectives

To compare the effectiveness and safety of LAAO versus direct oral anticoagulants (DOACs) in cancer patients with AF.

Methods

We emulated a target trial using Medicare claims data to compare the effectiveness and safety of LAAO versus DOACs in cancer patients with AF aged >65 years. We emulated randomization via 1:2 propensity score matching and assessed the per-protocol effects using Cox proportional hazards models. The primary effectiveness outcome was a composite of ischemic stroke, transient ischemic attack (TIA), systemic thromboembolism. The primary safety outcome was any bleeding.

Results

The matched cohort included 3,088 and 6,176 patients in LAAO and DOAC groups; mean age was 79.7 vs 79.9 years, and 36.1% vs 38.2% were female, respectively. LAAO was not associated with higher rates of ischemic stroke, TIA, or systemic thromboembolism (HR: 1.06; 95% CI: 0.92–1.22) or all-cause mortality (HR: 1.01; 95% CI: 0.95–1.08), and was associated with lower hazard of bleeding (HR: 0.93; 95% CI: 0.88–0.98). Sensitivity analyses yielded results consistent with the primary analysis.

Conclusions

Among cancer patients with AF, LAAO showed a lower risk of bleeding and no increased risk of stroke or all-cause mortality versus DOACs. These findings extend current evidence to cancer populations, supporting LAAO as an alternative for stroke prevention when long-term anticoagulation use may not be feasible.