Meta-analysis Comparing Amplatzer Cardiac Plug to Watchman for Stroke Prevention in Atrial Fibrillation

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Introduction: Atrial fibrillation patients with high bleeding risk or patients who cannot tolerate oral anticoagulation, left atrial appendage closure (LAAC) represent an alternative therapy for reducing thromboembolic events. This study is aimed at comparing the efficacy and safety of two contemporary devices, Amplatzer Cardiac Plug or Amulet (ACP) and Watchman.

Methods: Studies directly comparing ACP to Watchman were selected and a meta-analysis was performed to assess safety and efficacy outcomes between the two devices. Six studies were included in the study encompassing 614 patients that compared ACP to Watchman (Figure, Panel A).

Result: Overall, the cohort of both the groups were balanced, as higher CHADS2VA2Sc score in Watchman cohort was offset by higher age and HASBLED score in ACP cohort (Figure, Panel B). The incidence of periprocedural complications and adverse outcomes was low for both devices and displayed high efficacy rates. Meta-analysis showed no statistically significant difference in the safety outcome (Figure, Panel C) and efficacy outcomes (Figure, Panel D). However, total peri-device leakage and device related thrombus were significantly more in the Watchman cohort (Figure, Panel D). Mean procedure time and mean fluoroscopy time showed higher trend in the ACP cohort.

Conclusion: Both LAAC devices had low rates of complication and event rates. Large randomized trial comparing performance and safety profile of ACP and Watchman are required.