

# Is warfarin associated with higher risk of thrombus in left atrial appendage than direct oral anticoagulants?

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**Funding Acknowledgements:** Type of funding sources: None.

**Background:** Thrombus in left atrial appendage (LAA) is associated with cardiogenic ischemic stroke, and anticoagulation therapy is utilized to prevent thromboembolism.

**Purpose:** This study is to investigate the incidence of thrombus in left atrial appendage detected by transoesophageal echocardiography (TOE) under anticoagulation therapy with warfarin or direct oral anticoagulants (DOAC).

**Methods:** Between 2005 and 2016, the patients who underwent TOE under anticoagulation therapy due to atrial fibrillation more than one month were enrolled in this study. The patients were divided into 2 groups according to whether treated with warfarin or DOAC and baseline characteristics and incidence of LAA thrombus were assessed.

**Results:** Among the 313 study patients, 243 (78%) were treated with warfarin. The patients treated with warfarin were elder (median 73 y vs. 67 y [interquartile range 66 – 78 y vs. 58 – 72 y],  $P < 0.01$ ), the body mass index was lower (23.2 vs. 24.0 [21.0 – 25.4 vs. 21.3 – 26.9],  $P = 0.03$ ). The prevalence of male sex (64% vs. 71%,  $P = 0.26$ ) were similar between the 2 groups. The previous history of hypertension (69% vs. 59%,  $P = 0.10$ ), diabetes (24% vs. 19%,  $P = 0.32$ ), vascular disease (30% vs. 26%,  $P = 0.52$ ), and ischemic stroke were similar between the 2 groups (30% vs. 23%,  $P = 0.22$ ). The prevalence of CHA2DS2-VASc score  $> 1$  (84% vs. 59%,  $P < 0.01$ ) and the d-dimer level (0.7 vs. 0.5 mcg/ml [0.5 – 1.8 vs. 0.5 – 0.5 mcg/ml],  $P < 0.01$ ) were higher in the warfarin groups than those of the DOAC. The velocity of LAA was slower in the warfarin group than those of DOAC (35 vs. 55 cm/s [21 – 54 vs. 38 – 68 cm/s],  $P < 0.01$ ). The incidence of detection of LAA thrombus was 19% in the warfarin group and 3% in the DOAC group ( $P < 0.01$ ). In the warfarin group, the PT-INR were lower in the patients with LAA thrombus (1.38 vs. 1.66 [1.11 – 1.92 vs. 1.34 – 2.03],  $P = 0.03$ ).

**Conclusions:** The higher risk of ischemic stroke and out of range PT-INR may be the cause of the higher incidence of LAA thrombus in the patients treated with warfarin than those with DOAC.

Abstract Figure.

