Influence of the High-International Sensitivity Index (ISI) Reagents on the Daily Warfarin Dose on Anticoagulant Therapy for Atrial Fibrillation: A Report from J-RHYTHM Registry

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International Normalized Ratio of Prothrombin time (INR) is widely used for the appropriate oral anticoagulant therapy with warfarin in patients with atrial fibrillation. The INR values are affected by International Sensitivity Index (ISI) of the reagent since the INR is calculated by (PT ratio) / ISI. Although the thromboplastin reagent with ISI indicated nearly 1.0 is recommended, high-ISI reagents with over 1.5 of ISI were employed in total up to 23% in the registered institutions of J-RHYTHM Registry. Furthermore, there were significant differences in the average values of ISI and the daily warfarin dose among ten geographical divisions. Therefore, we investigated the influence of high-ISI reagents on the daily warfarin dose. The average values of ISI, INR, and warfarin dose were 1.20±0.28, 1.9±0.5, and 2.9±1.2 mg/day, respectively. The average daily warfarin dose negatively correlated with the ISI values (R=-0.22, P=0.007). The average daily warfarin dose in the institutions employed high-ISI reagents were significant lower than that in the institutions with less than 1.5 of ISI (2.6±0.4 vs. 2.9±0.4 mg/day, P=0.001). In conclusions, these data suggested that high-ISI reagents should be avoided for clinical use.

Keywords: atrial fibrillation, warfarin, international sensitivity index