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# Time in therapeutic range, quality of life and treatment satisfaction of patients on long-term warfarin for non-valvular atrial fibrillation: a cross-sectional study

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## Abstract

**Background:** The use of warfarin in patients with non-valvular atrial fibrillation (NVAf) can be challenging. In this study, we evaluate the time in therapeutic range (TTR), health-related quality of life (HRQoL) and treatment satisfaction of patients on long-term warfarin for NVAf. The HRQoL and treatment satisfaction were compared based on the TTR.

**Methods:** A cross-sectional study was conducted among patients on warfarin for NVAf who attended the anticoagulant clinic of a tertiary cardiology referral center in Sarawak from 1st June 2018 to 31st May 2019. Patients' TTR was calculated by using Rosendaal technique, while their HRQoL and treatment satisfaction were assessed by using Short Form 12 Health Survey version 2 (SF12v2) and Duke Anticoagulant Satisfaction Scale (DASS), respectively.

**Results:** A total of 300 patients were included, with mean TTR score of  $47.0 \pm 17.3\%$ . The physical component summary (PCS) and mental component summary (MCS) score of SF-12v2 were  $47.0 \pm 9.0$  and  $53.5 \pm 9.6$ , respectively. The total score for DASS was  $55.2 \pm 21.3$ , while the score for limitations (L), hassles and burdens (H&B) and positive psychological impacts (PPI) were  $18.0 \pm 10.0$ ,  $15.6 \pm 9.1$  and  $21.6 \pm 5.9$ , respectively. Seventy-three (24.3%) patients had good TTR ( $\geq 60\%$ ), with mean of  $70.2 \pm 8.7\%$ ; while 227 (75.5%) patients with poor TTR had significantly lower mean of  $39.5 \pm 11.9\%$  ( $p = 0.006$ ). There was no significant difference in the score of PCS ( $p = 0.150$ ), MCS ( $p = 0.919$ ) and each domain of SF-12v2 ( $p = 0.184$ – $0.684$ ) between good and poor TTR, except for social functioning ( $p = 0.019$ ). The total DASS score was also not significantly different between group ( $p = 0.779$ ). Similar non-significant difference was also reported in all the DASS sub dimensions ( $p = 0.502$ – $0.699$ ).

**Conclusions:** Majority of the patients on long-term warfarin for NVAf in the current study have poor TTR. Their HRQoL and treatment satisfaction are independent of their TTR. Achieving a good TTR do not compromise the HRQoL and treatment satisfaction. Therefore, appropriate measures should be taken to optimise INR control, failing which direct oral anticoagulant therapy should be considered.

**Keywords:** Warfarin, Time in therapeutic range, Quality of life, Treatment satisfaction, Direct oral anticoagulant

## Background

Atrial fibrillation (AF) is the commonest arrhythmia and represents substantial health care burden globally [1]. In 2010, the estimated prevalence of AF was 592 per 100,000

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