
Few studies have assessed the quality of warfarin anticoagulation therapy for stroke prevention in atrial fibrillation (AF) in office-based community practices. Dlott et al conducted a study to determine the time in therapeutic range (TTR; international normalized ratio [INR] 2–3) for adults with AF using the Quest Diagnostics Health Trends US national database from 2007 to 2008. Patients with ≥2 consecutive months of INR data, INR>1.2, and an ICD-9 diagnosis code of AF were included. Individuals with any gap in testing >60 days and INR data from hospital-based anticoagulation clinics were excluded from the study.

A total of 138,319 individuals referred by 37,939 physicians, yielding a total of 2,683,674 INR results, were included. Mean age was 74 years. The overall mean patient TTR was 53.7% (47.6% for patients with ≤6 months versus 57.5% for those with ≥6 months of INR data, P<0.0001). Patients with longer INR monitoring periods (≥6 months) and physicians with larger referral panel size were associated with better anticoagulation control. Younger age, female sex, and lower income were independently associated with poorer anticoagulant control (P<0.001). Practices in the Northeast and Midwest regions had higher mean TTR (53.3%–56.8%) than those in the South, Southwest, and West Coast (49.1%–52.8%).

This study demonstrated suboptimal anticoagulation control, particularly in younger age, female sex, and lower income, and calls for targeted interventions to improve oral anticoagulation care for AF in stroke prevention throughout the United States. Mean TTR reported in this study were lower than TTR values reported from randomized trials (55%–64%) and the Kaiser Permanente Northern California system (62.5%) but similar to those reported from Veteran Health Administration and Kaiser Permanente Southern California populations. Differences in the proportion of patients newly starting warfarin, proportion of patients managed through anticoagulation clinics, practitioners managing patients, and health status of the AF populations may account for the differences. Limitations include potential selection bias (as only patients receiving INR through Quest were assessed), lack of data on medications, type of practitioners managing patients, algorithms for adjusting anticoagulation, patient education, patients’ diet, and patients’ adherence. Nevertheless, the study provides one of the most comprehensive evaluations of anticoagulation in US office-based community practice outside of academic medical centers and integrated health systems. It has strength in large sample size and standardized laboratory assay representing approximately half of the outpatient physician practices in the United States.


Human immunodeficiency virus (HIV) infection increases the risk of ischemic stroke but little is known about the risk of intracranial hemorrhage (ICH). Chow et al conducted a large observational study to compare the rate of ICH in HIV-infected and uninfected individuals using the Partners Healthcare System Research Patient Data Registry (Boston, MA) from 1996 to 2009 to select the HIV-infected cases (N=4251) matched by age, race, and sex in a 1:10 ratio to HIV-uninfected controls (N=35268). ICD-9-CM codes were used to identify HIV infection and ICH. Analyses using Cox proportional hazard models were constructed to estimate adjusted hazard ratios for HIV infection and predictors of ICH. Median duration of follow-up was 5.47 years. Mean age was 41.6 years in the HIV cohort and 40.6 years in the control cohort.

The incidence rate of ICH was 2.29 per 1000 person-years in HIV-infected individuals compared with 1.23 per 1000 person-years in uninfected individuals, with an unadjusted incidence rate ratio of 1.85 (95% confidence interval, 1.37–2.47; P<0.001). In a multivariable model, HIV infection was independently associated with a higher hazard of ICH (1.87, P=0.003), with the effect diminishing with increasing age. Female sex was associated with a lower hazard of ICH in the uninfected cohort but not in the HIV cohort. In the HIV cohort, CD4 count <200×10⁶ cells/L and anticoagulant use were predictive of ICH.

This study adds to the growing literature that HIV is an independent risk for ICH and showed that CD4 count <200×10⁶ cells/L was associated with markedly higher risk of ICH. The study’s strengths include large sample size, robust statistical analyses, and adjustment for key variables. The study, however, has the limitations of reliance on ICD-9 codes for HIV status and ICH and lacks clinical data regarding blood pressure treatment and control, cerebral amyloid angiopathy, platelet count, international normalized ratio, type, location and severity of ICH, and specific antiretroviral therapy medications. Findings from the study should also be interpreted with caution as the demographics may not be representative of the US population and the Partners Healthcare System is not representative of other healthcare systems in the United States. Nevertheless, this study provides valuable information regarding the predictors of ICH among HIV-infected individuals and highlights the need for future investigations into the mechanism driving these associations and future interventions targeting individuals at high risk.