

Stroke Prevention in Patients with Atrial Fibrillation and Co-Morbid Physical and Mental Health Problems

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Abstract : Atrial fibrillation (AF), the most prevalent cardiac arrhythmia, is associated with an increased risk of stroke, contributing to heart failure and death. In this project, we aim to improve patient safety by screening for stroke risk among people with AF and co-morbid mental illness. To do so, we started by conducting a systematic review and meta-analysis on prevalence, management, and outcomes of AF in people with Serious Mental Illness (SMI) versus the general population. We then evaluated oral anticoagulation (OAC) prescription trends in people with AF and co-morbid SMI in King's College Hospital. We also evaluated the association between mental illness severity and OAC prescription in eligible patients in South London and Maudsley (SLaM) NHS Foundation Trust. Next, we implemented an electronic clinical decision support system (eCDSS) consisting of a visual prompt on patient electronic Personal Health Records to screen for AF-related stroke risk in three Mental Health of Older Adults wards at SLaM. Finally, we assessed the feasibility and acceptability of the eCDSS by qualitatively investigating clinicians' perspectives of the potential usefulness of the eCDSS (pre-intervention) and their experiences and their views regarding its impact on clinicians and patients (post-intervention). The systematic review showed that people with SMI had low reported rates of AF. AF patients with SMI were less likely to receive OAC than the general population. When receiving warfarin, people with SMI, particularly bipolar disorder, experienced poor anticoagulation control compared to the general population. Meta-analysis showed that SMI was not significantly associated with an increased risk of stroke or major bleeding when adjusting for underlying risk factors. The main findings of the first observational study were that among AF patients having a high stroke risk, those with co-morbid SMI were less likely than non-SMI to be prescribed any OAC, particularly warfarin. After 2019, there was no significant difference between the two groups. In the second observational study, patients with AF and co-morbid SMI were less likely to be prescribed any OAC compared to those with dementia, substance use disorders, or common mental disorders, adjusting for age, sex, stroke, and bleeding risk scores. Among AF patients with co-morbid SMI, warfarin was less likely to be prescribed to those having alcohol or substance dependency, serious self-injury, hallucinations or delusions, and activities of daily living impairment. In the intervention, clinicians were asked to confirm the presence of AF, clinically assess stroke and bleeding risks, record risk scores in clinical notes, and refer patients at high risk of stroke to OAC clinics. Clinicians reported many potential benefits for the eCDSS, including improving clinical effectiveness, better identification of patients at risk, safer and more comprehensive care, consistency in decision making and saving time. Identified potential risks included rigidity in decision-making, overreliance, reduced critical thinking, false positive recommendations, annoyance, and increased workload. This study presents a unique opportunity to quantify AF patients with mental illness who are at high risk of severe outcomes using electronic health records. This has the potential to improve health outcomes and, therefore patients' quality of life.

Keywords : atrial fibrillation, stroke, mental health conditions, electronic clinical decision support systems

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