The Role of the Pharmacist in a Multi-Disciplinary Atrial Fibrillation Clinic

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Atrial fibrillation (AF) is the most common cardiac rhythm disturbance and increases in prevalence with advancing age. Tallaght University Hospital currently assesses and admits over 400 patients with stroke and TIA annually; AF is implicated as a causative factor in 33% of these cases. The increasing prevalence of AF can be attributed to better detection of silent and paroxysmal AF, an ageing population and an increased prevalence of risk factors for developing AF, such as hypertension and obesity.[1] AF is a major cause of stroke, heart failure, sudden death and cardiovascular morbidity globally, and as such AF is a significant and growing public health concern.

An AF-related stroke is more likely to be fatal, disabling and recurrent than a non-AF related stroke. The risk of AF-related stroke is greatly reduced however by early detection and treatment with anticoagulation.[1] Non-Vitamin K Antagonist Oral Anticoagulants (NOACS) have emerged as the preferred oral anticoagulant over Vitamin K Antagonists (VKAs) for stroke prevention in AF in major published guidelines, and are now the agents of choice for patients newly started on anticoagulation.[2]

Given the severe consequences of stroke, potential for adverse events with unsupervised anticoagulation, and the importance of early safe anticoagulation at the point of AF diagnosis, the need for a multidisciplinary AF clinic was recognised early in Tallaght University Hospital. A group of Geriatricians/Stroke Physicians, Pharmacists, Cardiologists, Nurses and Haematologists collaborated to set up such a clinic in August 2015. This clinic is a multidisciplinary service with shared decision making, a format that subsequently formed one of the key recommendations in achieving optimal management of AF patients as set out by the European Society of Cardiology (ESC) and European Hearth Rhythm Association (EHRA) in recent guidelines.[1, 2]

NOACs, although deemed easier to monitor than warfarin, still represent a high risk medication with individually nuanced dosing schedules, many drug interactions and important counselling points. NOACs may require some specialist guidance at initiation and always need patient education and follow-up. The EHRA have highlighted the importance of educating and emphasising strict adherence to patients taking NOACs. Pharmacists, as medicine specialists, are key professionals in the management

of these patients. Recognising the value of extending the pharmacy role in this setting, the AF clinicians at Tallaght University Hospital supported the clinic's pharmacists as they completed a post-graduate Diploma in Advanced Pharmacy Practice from Queen's University Belfast, with a special qualification in prescribing.

The pharmacist counsels every patient attending our clinic on the indication for anticoagulation, importance of strict adherence, and management of missed doses. Each patient is provided with written information and a NOAC alert card. A recent HIQA report on medication safety recognised Tallaght University Hospital's AF clinic as a quality improvement initiative which contributes to better patient knowledge of their medicines.[3] Based on the findings of this report, it seems appropriate to recommend replication of the clinic in other centres to incorporate more patients for education and monitoring.

The clinic template is based on the EHRA's recommendations for the practical initiation and follow-up scheme for patients taking NOACs.[2] There are two pathways for patients attending the clinic. The first pathway is for patients who are new to the clinic. These patients are seen by a consultant/registrar initially, who confirms the diagnosis of AF and explains the nature and importance of the condition. Appropriate therapy is selected based on a risk/benefit analysis. Therapy selection is then reviewed by a pharmacist. Product characteristics, patient-related clinical factors, and patient preference are also taken into account when selecting an agent. The pharmacist counsels the patient on their new NOAC prescription.

The second pathway involves patients returning to the clinic for a follow-up appointment. These patients are seen first by the pharmacist. Laboratory results are reviewed as well as clinical parameters including heart rate and blood pressure. Renal function is accurately calculated by the pharmacist at each clinic. This is of utmost importance as all NOACs have precautions and dose adjustments based on creatinine clearance. The pharmacist reviews the patients' full list of medications at each clinic, checking for interacting medications and advising on dose adjustments and measures to minimise modifiable risk factors for bleeding. Patients are assessed for adherence, thromboembolic events, bleeding events and side effects. Refresher counselling is provided at each follow-up appointment, with the importance of adherence reiterated. Pharmacist recommendations are then reviewed by the registrar.

Patients are followed up initially one month after starting a NOAC. Subsequent follow-up intervals are tailored to the patients' needs with more frequent monitoring of frail patients and those with renal impairment, bleeding risk factors or adherence issues. Patients who have stable renal function and report no issues at clinic are discharged back to the care of their GP.

Patients most in need of specialist input are those with medical conditions or co-morbidities which may complicate the prescribing of NOACs. Patients with chronic kidney disease pose a challenge for

prescribers, as all four NOACs are to a greater or lesser extent partly eliminated by the kidneys. Careful consideration must be given when choosing an anticoagulant for this cohort of patients, with due regard to dosing cut-offs for the individual NOACs. Furthermore, the EHRA recommend more frequent monitoring of patients whose CrCl is ≤ 60ml/min.[2] More than half of our clinic's patients (55%) fell into this high-risk group. These patients are followed up at more frequent intervals than those without renal impairment.

High BMI patients pose a challenge to the prescribing of NOACs due to the limited efficacy and safety data available in extreme obesity.[2] The International Society on Thrombosis and Haemostasis recommend avoiding the use of NOACs in patients with a BMI ≥40 kg/m^2 or weighing >120Kg and that VKAs should be considered instead in such cases.[4] The average BMI of patients attending our clinic was 30kg/m^2, with 7% of patients falling into the extremely obese category (i.e. ≥40 BMI).[5] With the WHO predicting that Ireland is set to become one of the most obese countries in Europe by 2030, it is clear that further studies are needed to evaluate the efficacy of current fixed-dose regimens for NOACs in severely obese patients.

Our area of Dublin will experience a 500% increase in the over-75 population in the next 15 years, which is likely to increase the prevalence of AF and AF-related stroke, and consequently increase pressure on our bed usage. To ensure maximum efficacy in stroke prevention and avoid unnecessary admissions in our area, it is envisioned that the clinic will shortly extend its' services to include direct access for GPs, including GP referral liaison and on-line guidance and phone advice to guide initial treatment. Another area for consideration is early identification of in-patients, ED attenders and AMU patients with AF, and the implementation of 'point of detection' stroke prevention therapy. This strategy would include a clinical pharmacist specialist to advise on appropriate drug dosing, to identify potentially hazardous drug interactions, and to provide patient/family/GP education support.

Conflict of Interest

The authors have no conflict of interest to declare.

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