Warfarin Self-Monitoring in Atrial Fibrillation

Dr Fahad Yousaf
Prof Umesh Chauhan
AF: The Ticking Time Bomb

- Most common cardiac arrhythmia, and risk increases significantly with age
- There are currently over 1 million people diagnosed with AF in the UK.
- Expected to get double by year 2050
Impact of AF

AF is associated with x2 ↑ mortality risk:

• Impaired cardiac performance
  – 20%↓ cardiac output regardless of ventricular rate
  – Fast ventricular rates can push a compromised ventricle into heart failure
  – Uncontrolled AF may lead to rate related tachy-cardiomyopathy

• Pro-thrombotic state
  – 5 fold increase risk of stroke
  – 1.5% strokes attributable to AF at age 50-59
  – 23.5% strokes attributable to AF at age 80-89
NICE Guideline for AF (June 2014)

• Do not offer aspirin monotherapy for AF related stroke prevention

• Only consider dual antiplatelet therapy with aspirin and clopidogrel if all anticoagulation options are contraindicated
CHA2DS2VASC for all patients:
• Paroxysmal • Persistent • Permanent • Atrial flutter

- If CHA2DS2VASC ≥ 2 offer anticoagulation
- If CHA2DS2VASC = 1 consider anticoagulation
Risk Reduction with Warfarin

Reduces relative risk of stroke by approx 65 %

- **Absolute risk reduction**
  - Primary stroke 2.7 %
  - Secondary stroke 8.4 %

- **Numbers needed to treat for 1 year to prevent 1 stroke**
  - Primary stroke 37
  - Secondary stroke 12
  - Overall 25 (approx)
Limitations of Warfarin

• Narrow therapeutic window
• Wide variation in metabolism
• Numerous food and drug interactions
• Need for regular coagulation monitoring and dose adjustment
• Slow onset/offset
• Increase in intracranial and other bleedings
Warfarin has a Narrow Therapeutic Window

Relationship between clinical events and INR intensity
Time in Therapeutic Range (TTR)

- NICE defines poor anticoagulation control
  - TTR less that 65%
- All major NOAC trials showed non-inferiority to warfarin at or below following TTRS
  - 64% (dabigatran RELY trial)
  - 55% (rivaroxiblan ROCKET-AF trial)
  - 62% (apixiban ARISTOTAL trial)
- Improved TTR means fewer strokes and haemorrhages and lower healthcare costs
Self-Monitoring improves TTR

- **NICE (DG14)** guidance recommends INR self-monitoring for patients with atrial fibrillation (AF) that wish to do so
- Self-monitoring improves TTR even up to 20%
- 5% improvement in TTR across the UK would prevent 400-500 strokes per year
- Recent [Cochrane review](#) of almost 9,000 patients, where INR self-monitoring halved thromboembolic event
Improving Anticoagulation Self-Monitoring in Primary care

• Innovation Agency
• Atrial Fibrillation (AF) Collaborative Project within the North West Coast Academic Health Science Network with aim AIM to reduce AF related strokes
• 9 practices in East Lancs offer warfarin monitoring
• Remaining - nearly 5000 East Lancs patient on warfarin - commission service from local hospital
• This project aim to support these 9 practices to develop a common pathway - with self monitoring to improve TTR, give patient better care closer to home, reduce workload for staff and clinician (digital integration with EMIS)
• Prof Umesh Chauhan - Lead

• 5 practices across East Lanc-
  – Pendle View Medical centre
  – Parkside Medical Centre
  – Slaidburn Country Practice
  – Castle Medical Group
  – Pendleside Medical Practice
- Staff & Patients training on Coagu Check device and digital integration apps (INR star/Enage app/my Health app)
What happens

- Pt checks his INR using **CoaguChek**
- Transmits to Surgery (engage app/myHealth app/INR star) and integrates in EMIS
- Looked at by Nurse/GP
- Dose and next check date passed back to Pt’s (mobile) – notified
- TTR calculated
Results so far.....

From 4 practices - who have completed 12 months of monitoring

- 73.5% (25/34) have improved TTR while nearly quarter (9/34) had decline.
- 79.5 % had TTR above 65% range.
- On average there was 9% increase in TTR for the whole group
Next Step..

- Get all TTR data cleaned and analysed

- Detailed evaluation of the project including aspects like patient satisfaction, sense of control, impact on clinician workload etc will be analysed in the UCLAN survey in coming months

- Business case evaluation
Thank You

Questions?