

Warfarin Self-Monitoring in Atrial Fibrillation

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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 tachycardiomyopathy

- **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

NICE Guideline for AF (June 2014)

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 %**

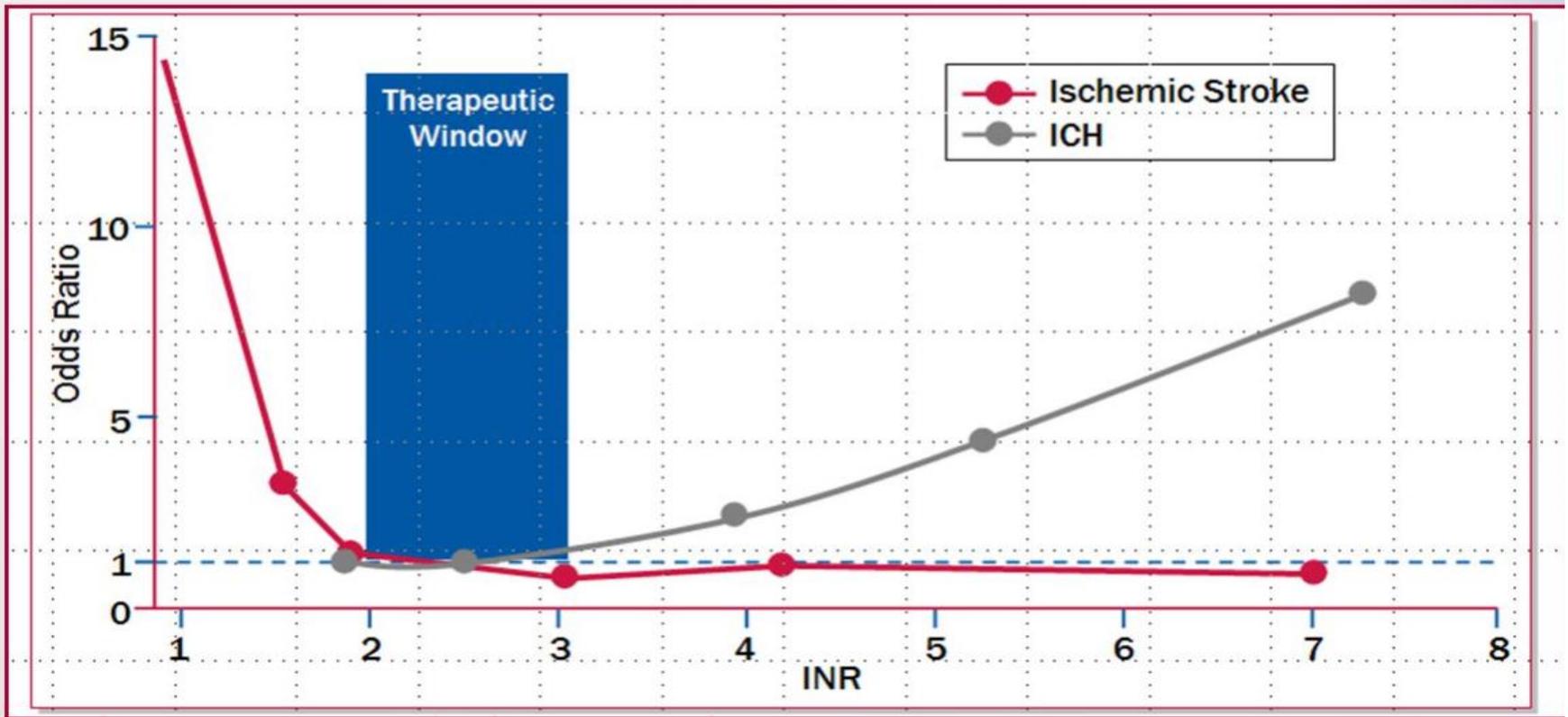
- Absolute risk reduction
 - Primary stroke 2.7 %
 - Secondary stroke 8.4 %
- Numbers needed to treat for 1 year to prevent 1 stroke
 - Primary stroke 37
 - Secondary stroke 12
 - **Overall 25 (approx)**

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 than 65%
- All major NOAC trials showed non-inferiority to warfarin at or below following TTRS
 - 64% (dabigatran RELY trial)
 - 55% (rivaroxiban 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?