



# Clinical audit of the management of patients in an anticoagulant primary care clinic in Ireland

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## Introduction

- 778,973 prescriptions for warfarin in Ireland (2008)
  - Atrial fibrillation
  - Pulmonary embolism / Deep vein thrombosis
  - Post-valve replacement
- AF associated stroke increases progressively with age
  - ☐ RR reduction of stroke with warfarin over aspirin 39%
- North Dublin Population Stroke Study 2010:
  - ☐ <25% of those with known AF anticoagulated with warfarin prior to stroke onset

## Models of care

- Primary care, secondary care, patient self-testing
- Strict control to target INR essential
- Time in therapeutic range (TTR) assessment
  - Rosendaal linear interpolation method or % time spent in range

## Study Setting

- General Practice urban/rural mix
- Complete GP<sup>®</sup> software
- Primary care anti-coagulant model adopted in 2002
- Patient care pathways and proactive audit assessments

## Aim of study

Audit to assess standard of care provided to patients as determined by TTR

- Rosendaal and point prevalence method
- Secondary objective to undertake an economic assessment of the model of care

## Audit standards

- BCSH recommendation - 60% TTR (+/- 0.5 units target)
- 4 weekly testing for those stabilised (Ansell *et al*)
- Rosendaal 69%, Point Prevalence 86%,
- Oppenkowski *et al*, 2007.

## Methods

- Protocol development and ICGP Ethical Approval (Nov '09)
- Patient identification - 1mg warfarin Rx
- Inclusion of Rosendaal's method of linear interpolation Complete GP<sup>®</sup>
- Data collection and analysis
- Re-audit 2010
- Microcosting analysis





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## Results

- 166 patients treated with warfarin 2002-2009
  - n=143 in practice
- 2009 n=57 (audit population)
- 2010 n=64 (audit population)

## Patient demographics

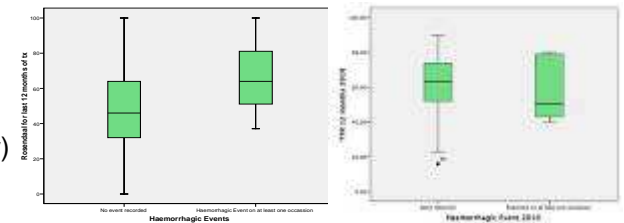
- Median age 77 years
- Gender 57% male:43% female
- AF 61%, DVT/PE 13%, Post-valve replacement 14.5%
- Cost to practice of managing one GMS AF patient on warfarin per year, €276.35

## Time in Therapeutic Range

	2009 n=57	2010 n=64
TTR (12 months)	54%	61%
Point prevalence	60.5%	75%
INR tests	12	15

## Clinical outcomes

- Haemorrhagic events
  - 2009 n=8 (1 major)
  - 2010 n=6
- Thromboembolic events
  - 2009 n=4
  - 2010 n=0



## Conclusion

- Simple adjustment to software allowed incorporation of TTR (Rosendaal method)
- TTR in re-audit increased to 61% from 54% (12 months)
- Adverse events decreased



## Study outcomes

- On-going audit to maintain standard of care
- Flagging system for warfarin patients and at risk patients
- Point of care testing imminent
- Dosage adjustment software now incorporated into software Dec 2010

Kelly et al. Stroke Associated with Atrial Fibrillation- Incidence and Early Outcomes in the North Dublin Population Stroke Study. Cerebrovasc Dis 2010;29:43-49  
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