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 © 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%,

Methods
• Protocol development and ICGP Ethical Approval (Nov ‘09)
• Patient identification - 1mg warfarin Rx
• Inclusion of Rosendaal’s method of linear interpolation Complete GP®
• Data collection and analysis
• Re-audit 2010
• Microcosting analysis
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**Results**
- 166 patients treated with warfarin 2002-2009
  - 2002 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

**Clinical outcomes**

<table>
<thead>
<tr>
<th>Outcome</th>
<th>2009</th>
<th>2010</th>
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<tbody>
<tr>
<td><strong>Time in Therapeutic Range</strong></td>
<td></td>
<td></td>
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<tr>
<td>TTR (12 months)</td>
<td>54%</td>
<td>61%</td>
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<tr>
<td>Point prevalence</td>
<td>60.5%</td>
<td>75%</td>
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<tr>
<td>INR tests</td>
<td>12</td>
<td>15</td>
</tr>
</tbody>
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**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

Ref: