How many people with an acute pulmonary embolism are suitable for treatment with novel anticoagulants and what would this cost to the acute sector?

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Introduction

Rivaroxaban is a novel anticoagulant licensed for use in Pulmonary Embolism. We aimed to determine how many patients with PE would be suitable for Rivaroxaban and how much this would cost the acute sector.

The recent NICE guidelines suggested Rivaroxaban was not inferior to Warfarin for treatment of PE if the intended duration was less than 12 months and the cost summary viewed Rivaroxaban as a cost effective option for treatment\(^1\). We aimed to investigate how much changing from traditional therapy, Warfarin and Low Molecular Weight Heparin (in this case Dalteparin), to Rivaroxaban would cost the Acute Sector.

Methods

All patients diagnosed with a PE in the year between July 2011 - June 2012, in Aberdeen Royal Infirmary, were included. Rivaroxaban was considered indicated if the patient had an acute PE with an intended duration of therapy of 12 months or less. Rivaroxaban was considered contraindicated if the patient met any criteria in table 1\(^2\).

<table>
<thead>
<tr>
<th>Assumptions Made to Calculate Cost</th>
<th>Cost</th>
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</thead>
<tbody>
<tr>
<td>Cost of INR Test</td>
<td>£1.07</td>
</tr>
<tr>
<td>Cost of 3 Packets of Warfarin</td>
<td>£0.73</td>
</tr>
<tr>
<td>Cost of 3 weeks of Rivaroxaban</td>
<td>£105.84</td>
</tr>
<tr>
<td>Cost of Dalteparin Dose</td>
<td>£6.00</td>
</tr>
</tbody>
</table>

Table 2

Results

There were 160 people diagnosed with a PE during the 12 months in Aberdeen Royal Infirmary between July 2011 and June 2012. Notes were available for 121 (76%). 62 (51%) patients had an indication for Rivaroxaban of which 6 (10%) had a contraindication. The cost for treating the 56 suitable patients with Rivaroxaban and 65 unsuitable with traditional therapy would be estimated at £8638.40 versus £4832.93 for traditional therapy for all 121 patients. The average cost per patient for conventional therapy was £39.94, compared to £105.84 for Rivaroxaban. Treating all suitable patients with Rivaroxaban (ie 46%) would increase the acute sector annual budget from £6390.65 to £1,1422.68 – a rise of £5032.03 (or 79%) per year. This would be based on a population of ARI providing care for Aberdeen and Aberdeenshire which was estimated at 475645 in 2011\(^3\). The average length of stay for patients suitable for Rivaroxaban was 6 days, which could potentially be reduced with its introduction.

A cost analysis was performed with the assumptions based on local information from our pharmacy and current local practice in Aberdeen Royal Infirmary: an INR test costs £1.07; a Dalteparin dose costs £6 (price of a 15,000unit dose); patients received at least 5 doses of Dalteparin; the acute sector supplies 3 packets of Warfarin on discharge (cost = 73p); if Rivaroxaban was utilised the acute sector would supply the first 3-weeks of treatment (cost = £105.84).

References