Variation in the risk of venous thromboembolism in patients following colectomy: a population based cohort study from England

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Introduction
1.5.8 Offer VTE prophylaxis to patients undergoing gastrointestinal surgery who are assessed at increased risk.

1.5.10 Extend prophylaxis to 28 days postoperatively for patients who have had major cancer surgery in the abdomen or pelvis.
Non-malignant disease

Venous thromboembolism during active disease and remission in inflammatory bowel disease: a cohort study

Matthew Grainge, Joe West, Timothy R Card

Clinical Gastroenterology and Hepatology 2014;

Diverticular Disease Is Associated With Increased Risk of Subsequent Arterial and Venous Thromboembolic Events

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Aim

• To determine absolute and relative rates of VTE following colectomy by indication, admission type (emergency or elective) and time after surgery.
Methods

• Data Sources
  – CPRD, HES, ONS

• Cohort
  – OPCS

• Outcome
  – VTE

Methods

• Exposures
  – Indication
  – Admission type
  – Comorbidity

• Statistical Analysis
  – Absolute rates
  – Cox regression
• 12,618
• 50.4% Male
• Median age 72 years vs. 62 years
• 32% emergency
• 63% malignancy
Risk of VTE in year following elective colectomy

Nelson-Aalen cumulative hazard estimates

Number at risk
Non-Malignant 2520
Malignant 6138

Malignant
Non-Malignant

Time one year
0.00 0.02 0.04 0.06
6138 5710 5493 5225 4947
2520 2406 2338 2246 2154

0.00 0.02 0.04 0.06
0.02
0.04
0.06

Non-Malignant
Malignant

NHS
National Institute for Health Research
Risk of VTE in year following emergency colectomy

Nelson-Aalen cumulative hazard estimates

Number at risk
Non-Malignant 2244
Malignant 1716

Time one year
0.00 0.02 0.04 0.06 0.08 0.1 0.12 0.14 0.16 0.18 0.2 0.22 0.24 0.26 0.28 0.3 0.32 0.34 0.36 0.38 0.4 0.42 0.44 0.46 0.48 0.5 0.52 0.54 0.56 0.58 0.6 0.62 0.64 0.66 0.68 0.7 0.72 0.74 0.76 0.78 0.8 0.82 0.84 0.86 0.88 0.9 0.92 0.94 0.96 0.98 1.0

0.00 0.02 0.04 0.06

0.00

0.02

0.04

0.06

Non-Malignant
Malignant

Time one year
Number at risk
Non-Malignant 2244
Malignant 1716

1797 1711 1636 1558
1334 1204 1092 999

Non-Malignant
Malignant
## Risk of VTE in first month following colectomy

<table>
<thead>
<tr>
<th></th>
<th>Events</th>
<th>Person time</th>
<th>Rate (per 1000 person years)</th>
<th>95% CI</th>
<th>HR*</th>
<th>95% CI</th>
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<tbody>
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<td></td>
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<tr>
<td>Non-malignant</td>
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<td>44.67</td>
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<tr>
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<td>0.13</td>
<td>121.46</td>
<td>74.4</td>
<td>1.11</td>
<td>0.54-2.27</td>
</tr>
</tbody>
</table>
Limitations

• No data on VTE prophylaxis in hospital
  – ENDORSE ~ 50% received prophylaxis
  – Sensitivity analysis
Summary

• Risk of VTE increased following colectomy
• Risk is greatest in the first month
• Following emergency colectomy the rate of VTE is similar regardless of indication
Acknowledgements