IMPROVING THE CARE OF THE CANCER ASSOCIATED THROMBOSIS (CAT) PATIENT

Kieron Power, Lead VTE Clinic Pharmacist, Singleton Hospital
DISCLAIMERS

Honoraria

▪ Leo Pharma
▪ Pfizer BMS
BACKGROUND
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THROMBOSIS

At AGPU (own data):

- In a six month period between June 2017 and January 2018, 36 of 156 (23%) VTE diagnoses were cancer patients
What do you think when somebody says “cancer”? 

Chemotherapy  Neutropenia

Metastases  

Alopecia  Radiotherapy
CANCER + THROMBOSIS = CAT

One in five cancer patients develop blood clots which could be fatal

Awareness of cancer-associated thrombosis is low, say campaigners

By Mark Smith Health Correspondent
09:16, 26 May 2017
A QUESTION

Do we need to manage a patient with CAT differently to a general VTE patient?
WHY IS MANAGING A PATIENT WITH CAT DIFFERENT TO A GENERAL VTE?

1. Different Clot

Healthy individual
\[ d_f = 1.73 \]
Fibre width = 0.27 ± 0.05 μm

Stage I adenocarcinoma
\[ d_f = 1.74 \]
Fibre width = 0.24 ± 0.06 μm

Stage IV adenocarcinoma
\[ d_f = 1.78 \]
Fibre width = 0.16 ± 0.02 μm

Evans E, Thrombosis and Hemeostasis, 2015
CANCER + THROMBOSIS = CAT

Second most common cause of death in cancer patients (after the tumour itself)

Affects survival rate (12% one year survival rate for CAT patients vs 36% in control patients, Sorensen et al 2000)

Cancer is the most important single risk factor for VTE (Heit JA et al 2002)

Risk further increased by chemotherapy (Haddad et al 2006)
WHY IS MANAGING A PATIENT WITH CAT DIFFERENT TO A GENERAL VTE?

2. Different Treatment

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Dalteparin (N=338)</th>
<th>Oral Anticoagulant (N=338)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age (yr)</td>
<td>62±12</td>
<td>63±13</td>
</tr>
<tr>
<td>Female sex (no. of patients)</td>
<td>179</td>
<td>169</td>
</tr>
<tr>
<td>ECOG performance score (no. of patients)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>80</td>
<td>63</td>
</tr>
<tr>
<td>1</td>
<td>135</td>
<td>150</td>
</tr>
<tr>
<td>2</td>
<td>118</td>
<td>122</td>
</tr>
<tr>
<td>3§</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Hospitalization status (no. of patients)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outpatient</td>
<td>169</td>
<td>156</td>
</tr>
<tr>
<td>Inpatient</td>
<td>169</td>
<td>182</td>
</tr>
<tr>
<td>Hematologic cancer (no. of patients)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No clinical evidence of disease</td>
<td>36</td>
<td>33</td>
</tr>
<tr>
<td>Localized disease</td>
<td>39</td>
<td>43</td>
</tr>
<tr>
<td>Metastatic disease</td>
<td>223</td>
<td>232</td>
</tr>
<tr>
<td>Antineoplastic treatment (no. of patients)</td>
<td>266</td>
<td>239</td>
</tr>
<tr>
<td>Current smoker (no. of patients)</td>
<td>33</td>
<td>42</td>
</tr>
<tr>
<td>History of DVT or PE (no. of patients)</td>
<td>39</td>
<td>36</td>
</tr>
<tr>
<td>Recent major surgery (no. of patients)</td>
<td>62</td>
<td>67</td>
</tr>
<tr>
<td>Central venous catheter (no. of patients)</td>
<td>46</td>
<td>40</td>
</tr>
<tr>
<td>Qualifying thrombotic event (no. of patients)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DVT alone</td>
<td>235</td>
<td>230</td>
</tr>
<tr>
<td>PE, with or without DVT</td>
<td>103</td>
<td>108</td>
</tr>
</tbody>
</table>

* Plus–minus values are means ±SD, ECOG denotes Eastern Cooperative Oncology Group, DVT deep-vein thrombosis, and PE pulmonary embolism.
† Eight patients were included in the study before the protocol was amended to exclude patients with an ECOG score of 3 or 4.
‡ Antineoplastic treatment included chemotherapy, radiation, and surgery.
WHY IS MANAGING A PATIENT WITH CAT DIFFERENT TO A GENERAL VTE?

3. Different Patient

The PELICAN study (Noble et al 2015) focused on patient understanding and anxieties in CAT patients

Focused on patients who:

- Had cancer, but had not had CAT (pre-diagnosis)
- Had cancer and had been diagnosed with CAT (post-diagnosis)

Consistent findings across patients interviewed

Lack of understanding/awareness of CAT found in both pre- and post-diagnosis arm

High anxiety levels found in post diagnosis arm
Lack of information and high anxiety post diagnosis (PELICAN Study)

- Patients feel shocked

- \[\ldots\text{having the cancer and then the thrombosis on top of it, erm, not knowing how bad it was when I went in, I know I was in terrific pain with my chest and that erm, it was frightening to be honest. PELICAN Study, Noble et al, 2015}\]

- How many patients associate the thrombosis to a worsening of their cancer?
- What anxieties develop?
- How should this be addressed?
Lack of information and high anxiety post diagnosis (PELICAN Study)

- Patients feel they are not given enough information

- *Nobody really explained, [...] ‘coz they need the bed, you know. So you don’t feel as though erm, you know, I think if it was a little bit more relaxed er, they probably would’ve got somebody you know, from a department to come and explain it more.* PELICAN Study, Noble et al, 2015

- Do we give people enough information?
- Patients with cancer are given considerable info around other aspects of their care, e.g. neutropenic sepsis
- Where else do patients turn for information? E.g. internet
Diagnostic pathways varied (up to 8 pathways identified creating variation in practice and patient experience)

~80% of patients have doses adjusted to reflect changes in body weight

~70% of patients adequately monitored (U+E, FBC)

~60% of patients received at least minimum duration of therapy (6 months)

Findings at Singleton Hospital
How do we manage a patient with cat?

The patient presents to us in clinic feeling:

- Anxious
- Concerned
- Uninformed
- How have we been managing these patients?
HOW DO WE MANAGE A PATIENT WITH CAT? (3)

- August 2017 CAT Pathway launched
- Hosted within current service in AGPU
- Clinic expanded to meet demand
  - Three hot-clinic slots per day
  - Aim for same day appointments
- Referrals accepted for inpatients and outpatients diagnosed with CAT
CAT CLINIC

Ensure correct treatment prescribed

Clinically assess suitability of medication for patient:
- Clinical assessment
- Cautions and contraindications
- Interactions

Ensure supply of medication

Ensure follow up strategy developed

Ensure patient educated and empowered
- Administration
- Adverse drug effects
FIRST CLINIC CONSULTATION

Focused on patient education and reassurance

- Explanation of CAT and the link between cancer and thrombosis
- Explanation of how CAT will be treated and what expectations the patient can have
- Each of these has a degree of anxiety for the patient
- A standard clinic appointment slot is generally not enough to adequately address these issues
WIDER PHARMACY TEAM

Pharmacist role changing

Technician role expanding to support this

In ABMU, CAT technician role created

After 1 month in CAT clinic, patient referred to CAT technician “Virtual clinic”

Support with:

- Ongoing supply of medication
- Monitoring
- Recording weight
- Patient education and support
- Referral for review at 6 month point
HOW EFFECTIVE IS SERVICE

- Service Improvement Evaluation undertaken over the last 12 months
- Two arms (18 patients in each)
  - Previous model (non-CAT clinic)
  - Current model (CAT clinic)
- Focus on evaluating:
  - Patient perception of knowledge
  - Actual knowledge retention
HOW EFFECTIVE IS SERVICE (2)

How much information were you provided about your clot diagnosis at your first clinic appointment?

<table>
<thead>
<tr>
<th>Information Diagnosis</th>
<th>Non-CAT Clinic</th>
<th>CAT Clinic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7.1</td>
<td>8.4</td>
</tr>
</tbody>
</table>
How much information were you provided about your clot treatment at your first clinic appointment?
What is the minimum amount of time that you will be treated with these injections?

A) 6 months
B) 5 months
C) 1 year

Correct Answer

Non-CAT Clinic
CAT Clinic
HOW EFFECTIVE IS SERVICE (5)

What is the most common side effect of therapy:

A) N+V
B) Bruising
C) Headaches

Correct Answer
- Non-CAT Clinic: 77.8
- CAT Clinic: 100
HOW EFFECTIVE IS SERVICE (6)

How long should you take to inject the contents of the syringe

A) 7 Seconds
B) 5 Seconds
C) 10 Seconds

Correct Answer

50
66.7
CAT Clinic
Which of the following areas should you NOT inject into:

A) Outer Leg  
B) Belly Button  
C) Outer Thigh
At what angle should you hold the syringe

A) 90 degrees
B) 45 degrees
C) 180 degrees
Which of the following drugs should you avoid whilst on tinzaparin

A) Ibuprofen
B) Ramipril
C) Paracetamol

Correct Answer

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<thead>
<tr>
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<th>Non-CAT Clinic</th>
<th>CAT Clinic</th>
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<tbody>
<tr>
<td>38.9</td>
<td></td>
<td></td>
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<tr>
<td>44.4</td>
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WHAT ABOUT ANXIETIES?

- Ongoing work
- 44% of patients who presented to clinic had not been told about the risk of developing VTE with cancer
- Patients graded their anxiety as being on average 5.2/10 on attendance to appointment
- Patients graded their anxiety as being 1.8/10 on leaving the CAT clinic appointment
HOW DO WE MANAGE A PATIENT WITH CAT?

Diagnostic pathways varied (up to 8 pathways identified creating variation in practice and patient experience)

~80% of patients have doses adjusted to reflect changes in body weight

~70% of patients adequately monitored (U+E, FBC)

~60% of patients received at least minimum duration of therapy (6 months)
CHANGE SINCE VIRTUAL CLINIC?

- Diagnostic pathways varied (up to 8 pathways identified creating variation in practice and patient experience) – NOT MEASURED
- 93% of patients have doses adjusted to reflect changes in body weight
- 95% of patients adequately monitored (U+E, FBC)
- 95% of patients received at least minimum duration of therapy (6 months)

Findings at Singleton Hospital (Update)
OTHER SUPPORT

- Considerable amount of information to give to patients
- Are patients in the right frame of mind at clinic appointment?
- Is 20 minutes enough?
- Out of clinic support explored
CANCERCLOT ™

- Opportunity to work with Leo Pharma to develop bespoke version of website
- Can be tailored dependant on patients needs
- Articles, videos, etc.
- Local section added with contact details and information on services
How effective is CancerClot™ as a patient information resource?

Online questionnaire added to website

Knowledge of clot diagnosis (Scale 1-4)

Pre-Accessing Website: 2.2
Post-Accessing Website: 2.9
CANCERCLOT™

- How effective is CancerClot™ as a patient information resource?
- Online questionnaire added to website

Knowledge of clot treatment (Scale 1-4)

<table>
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<th>Post-Accessing Website</th>
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<tr>
<td></td>
<td>2.3</td>
<td>3.2</td>
</tr>
</tbody>
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How effective is CancerClot™ as a patient information resource?

Online questionnaire added to website

Who introduced you to the website?

Chart Title

- Introduced to website
  - 71
  - 29

- Pharmacist
- Doctor
- Nurse
- Other
How effective is CancerClot™ as a patient information resource?

Online questionnaire added to website

What element did you find most beneficial?
How effective is CancerClot™ as a patient information resource?

Online questionnaire added to website

Would you recommend the website to others?

![Bar Chart](chart.png)

Would you recommend

Yes: 67

No: 33
NEXT STEPS

- Repeat data collection for CancerClot arm
- Work on raising awareness of CAT in all cancer patients
  - Leaflets
  - Booklets
  - Video Cards
QUESTIONS?