THE NORTHERN HOSPITAL

MALIGNANCY RELATED VENOUS THROMBOEMBOLISM

Introduction

Malignancy-related venous thrombo-embolism is a very common complication of malignancy in general.

There is a 2 year incidence of up to 8%.

Patients with advanced disease of the brain, lung, uterus, bladder, pancreas, stomach and kidney are of the highest risk.

Metastatic disease carries an even higher risk again.

Therapeutic anticoagulation with enoxaparin (clexane) is recommended in all patients who have active malignancy and venous thromboembolism.

Enoxaparin has been found to be more effective than warfarin for long-term anticoagulation in cancer patients.

Pathophysiology

The causes of a hypercoaguable state in malignant disease is multifactorial, however the major specific risk factors for venous thromboembolism in malignant disease include the following:

1. Site of cancer:
    - Specifically, brain, lung, uterus, bladder, pancreas, stomach and kidney carry the highest risk.
2. Pre-chemotherapy platelet count of 350 $x10^9$/L
3. Haemoglobin level <10 g/dl.
4. Use of erythropoiesis- stimulating agents
5. Leukocyte count >$11x10^9$/L
6. Body mass index of > 35 kg/m^2 (risk score 1).

Clinical assessment

All patients who develop venous thromboembolism, either of the deep system of the superficial system carry a high risk for progression and complications.

All cancer patients who develop a VTE should be assessed for the possibility of **disease progression**

Investigations

1. FBE
2. U&Es/ glucose
3. LFTs
4. Calcium/ phosphate

Others as clinically indicated.

Patients who develop a superficial thromboembolism should be thoroughly investigated for the possibility of an associated deep venous thrombosis.

The threshold for ruling out possible pulmonary embolism should be low.

Thrombophillia screens are generally **not** *routinely* recommended in patients with underlying malignancy as this is unlikely to change management.

Management

Anticoagulation therapy:

Therapeutic anticoagulation with enoxaparin (clexane) is recommended in all patients who have active malignancy and venous thromboembolism.

Enoxaparin has been found to be more effective than warfarin for long-term anticoagulation in cancer patients

There is **no** current evidence for the use of the New Oral Anticoagulants (NOACs) in this group of patients.

It is recommended that anticoagulation therapy be continued as long as there is clinical evidence of *active* malignant disease, (including chronic metastatic disease).

IVC Filters:

In general the use of an IVC filter is **not** recommended in most cases.

If they are being considered then there should also be consultation with the **Clinical Haematology Unit.**

The use of an IVC filter may be considered in the following circumstances:

- Patients requiring significant periods off anticoagulation during the first 14 days post VTE (e.g. surgery)
- Bleeding diathesis preventing the use of anticoagulation in the first 14 days post VTE
- Recurrent PE despite adequate anticoagulation.

Note that IVC filters are generally **not** for long term use.

In general they should be removed within **2 weeks** of insertion.

Thrombolysis or surgical thrombectomy:

Catheter-directed thrombolysis is generally **not** routinely recommended.

However, thrombolysis may be considered in individuals with *extensive* VTE and:

- Have access to catheter-directed thrombolysis, as recommended by **Vascular Surgery**
- Attach a high value to prevention of post thrombotic syndrome
- Attach a lower value to the initial complexity and risk of bleeding with thrombolytic therapy.

Prophylaxis:

All patients with underlying active malignancy should receive anticoagulation prophylaxis during inpatient stays.

Disposition

All patients should be followed up by either **Medical Oncology** or **Clinical Haematology** *at least once* during their treatment.

In particular Clinical Haematology follow up is recommended in the following circumstances:

- Uncertainty regarding duration of anticoagulation
- Concurrent bleeding issues

- Clinician concern in general

- Use of new oral anticoagulant agents, (for example in patients unable to take clexane/ warfarin).

References

1. Guyatt G et al. Antithrombotic Therapy and Prevention of Thrombosis 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines; Chest 2012; 141(2): 7S-46S

2. Mandala M et al. Venous thromboembolism in cancer patients: ESMO Clinical Practice Guidelines for Management. Ann Oncol 2010; 21 (Supplement 5)

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Acknowledgements:
Dr Prahlad Ho/ Dr L. Hayes
November 2013.