Recommendation for Guidance Executive

Exceptional review of the section on the use of intermittent pneumatic compression to prevent venous thromboembolism (VTE) in patients with stroke of the NICE Clinical Guideline

CG 92: Reducing the risk of VTE in patients admitted to hospital

Background information

Guideline issue date: 2010

2 year review (full guideline): 2012 (No update required)

Guideline developed by: National Clinical Guideline Centre

Recommendation relating to the use of intermittent pneumatic compression in patients with stroke (within Chapter 24: Stroke patients)

- Until the patient can have pharmacological VTE prophylaxis, consider offering a foot impulse or intermittent pneumatic compression device.

Review recommendation

- The section of the guideline on the use of intermittent pneumatic compression to prevent venous thromboembolism in patients with stroke (within chapter 24: Stroke patients) should be updated at this time.

Process for reviewing the guidance

This follows the exceptional reviews process following notification of the recent publication of the CLOTS 3 trial data.

A focused literature search was conducted to be able to answer the following clinical question:

- What is the effectiveness of intermittent pneumatic compression devices (IPCD) in reducing the risk of venous thromboembolism in adults with stroke admitted to hospital?

Literature searches were limited to the date of the last review in 2012 to date.
Factors influencing the decision

Literature search

1. Through an assessment of abstracts from the focused search one study relating to the clinical question was identified.

2. The study was a report of the findings of a UK multicentre RCT (94 centres, n = 2876) that assessed intermittent pneumatic compression (IPC) in immobile patients with acute stroke - the CLOTS 3 trial.

3. Participants were randomised to receive either IPC or no IPC; compression duplex ultrasound (CDU) of both legs was carried out by technicians blinded to treatment allocation and followed up for 6 months to determine survival and later symptomatic VTE. Intention-to-treat analysis was carried out.

4. Results showed that DVT in the proximal veins occurred in 8.5% of participants allocated IPC and 12.1% of participants allocated no IPC; an absolute reduction in risk of 3.6% (95% CI 1.4% to 5.8%); the adjusted Odds Ratio (OR) for the comparison of was 0.65 (95% CI 0.51 to 0.84).

5. Other results for intervention vs control were as follows: death - 11% vs 13% (p=0.057); skin breaks on the legs - 3% vs 1% (p=0.002); falls with injury 2% vs 2% (p=0.221)

6. The authors concluded that IPC is an effective method of reducing the risk of DVT and possibly improving survival in a wide variety of patients who are immobile after stroke.

Clinical Advice

7. A proposal to update the section of the guideline on the use of intermittent pneumatic compression (IPC) to prevent venous thromboembolism in adult patients admitted to hospital with stroke was discussed with the GDG vice-chair/clinical advisor, who indicated that he agreed with the proposal to update this section of the guideline.
Anti-discrimination and equalities considerations

8. No evidence was identified to indicate that the guideline scope does not comply with anti-discrimination and equalities legislation. The guideline is about the care and treatment of adults who are at risk of developing venous thromboembolism while in hospital in the NHS in England and Wales

Relationship to quality standards

9. This guideline relates to a published quality standard on VTE prevention (QS3).

Conclusion

10. Through the exceptional review process, new, more robust evidence on intermittent pneumatic compression for patients with stroke was identified that could serve as a basis to strengthen the existing recommendation. In the original guideline, only one small study (n=26) investigating the use of IPC devices compared with no prophylaxis in stroke patients was identified, with no statistically significant difference in DVT events.

11. The section of the guideline on the use of IPC to prevent VTE in patients with stroke (within chapter 24: Stroke patients) should be updated.

12. This might also have an effect on the recommendations for the “mechanical VTE prophylaxis” section of chapter 6 of the guideline (Summary of the effectiveness of mechanical and pharmacological prophylaxis) about which prophylaxis to use in the general population:

- Base the choice of mechanical prophylaxis on individual patient factors including clinical condition, surgical procedure and patient preference. Choose any one of:
  - anti-embolism stockings (thigh or knee length)
  - foot impulse devices
  - intermittent pneumatic compression devices (thigh or knee length)

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