

LETTERS

VENOUS THROMBOEMBOLISM PROPHYLAXIS

Heparin prophylaxis has no benefit in medical patientsMichael Snee *consultant in clinical oncology*

Leeds Teaching Hospitals NHS Trust, St James's Hospital, Leeds LS9 7TF, UK

The article on the introduction of methods to encourage or mandate the prescription of prophylaxis for venous thromboembolism (VTE) is misconceived.¹ It is not true that most cases of deep vein thrombosis (DVT) in medical patients can be prevented. A recent meta-analysis found that symptomatic DVT occurred in 0.79% of patients given prophylaxis with heparin versus 0.96% of controls, with a mortality of 6.5% versus 6.6% (table 1).²

Another recent study also showed no benefit for heparin prophylaxis.³ These results are not surprising given that the reduction in symptomatic VTE is the same as the increase in bleeding in patients given heparin.² In the light of National Institute for Health and Clinical Excellence guidance on how risks and benefits are presented to patients, advice that VTE prophylaxis be offered to patients with medical conditions is perplexing.^{4 5}

Patients admitted to hospital with a medical condition (excluding stroke) could be counselled as follows:

- You have about a 10 in 1000 chance of developing a blood clot in your veins that will cause symptoms during your admission and about a three in 1000 chance of dying from a blood clot in the next three months.

- A daily injection would reduce these risks to about eight in 1000 and two in 1000, respectively. However, the chance of bleeding would increase from 27 in 1000 to 47 in 1000 and the chance of having a serious (life threatening) bleed from two in 1000 to three in 1000.

I doubt, given this information, that many patients (or doctors) would consider heparin to be worthwhile.

Competing interests: None declared.

- 1 Streiff MB, Carolan HT, Hobson DB, Kraus PS, Holzmueller CG, Demski R, et al. Lessons from the Johns Hopkins Multi-Disciplinary Venous Thromboembolism (VTE) Prevention Collaborative. *BMJ* 2012;344:e3935. (19 June.)
- 2 Lederle FA, Zylla D, MacDonald R, Wilt TJ. Venous thromboembolism prophylaxis in hospitalized medical patients and those with stroke: a background review for an American College of Physicians Clinical Practice guideline. *Ann Intern Med* 2011;155:602-15.
- 3 Kakkar AK, Cimminieli C, Goldhaber SZ, Parakh R, Wang C, Bergmann JF; LIFENOX Investigators. Low-molecular-weight heparin and mortality in acutely ill medical patients. *N Engl J Med* 2011;365:2463-72.
- 4 National Institute for Health and Clinical Excellence. Venous thromboembolism—reducing the risk. CG92. 2010. www.nice.org.uk/cg92.
- 5 National Institute for Health and Clinical Excellence. Patient experience in adult NHS services. CG138. 2012. <http://publications.nice.org.uk/patient-experience-in-adult-nhs-services-improving-the-experience-of-care-for-people-using-adult-cg138>.

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Table

Table 1 | Outcomes of heparin prophylaxis in non-surgical patients²

| Outcome | Studies (N) | Heparin group, n/N (%) | Control group, n/N (%) | Peto odds ratio (95% CI) | Absolute effect per 1000 patients treated (95% CI) |
|-----------------------|-------------|------------------------|------------------------|--------------------------|--|
| Mortality | 10 | 679/10 466 (6.5) | 679/10 251 (6.6) | 0.94 (0.84 to 1.04) | -4 (-11 to 3) |
| Symptomatic DVT | 5 | 25/3166 (0.79) | 27/2791 (0.96) | 0.78 (0.45 to 1.35) | -2 (-6 to 4) |
| PE | 10 | 88/10 466 (0.84) | 127/10 251 (1.2) | 0.69 (0.52 to 0.90) | -4 (-6 to -1) |
| PE associated death | 6 | 50/10157 (0.49) | 53/9937 (0.53) | 0.93 (0.63 to 1.38) | 0 (-2 to 2) |
| Fatal PE | 5 | 21/8927 (0.24) | 26/8693 (0.30) | 0.77 (0.43 to 1.37) | -1 (-2 to 1) |
| All bleeding events | 8 | 216/4550 (4.7) | 115/4194 (2.7) | 1.34 (1.08 to 1.66) | 9 (2 to 18) |
| Major bleeding events | 9 | 41/10 331 (0.40) | 25/10 116 (0.25) | 1.49 (0.91 to 2.43) | 1 (0 to 3) |

*DVT=deep vein thrombosis; PE=pulmonary embolism.