

## Clinical predictors of adverse outcome in VTE outpatients – analysis of patients with ‘first event’ VTE

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**Background:** There are few data describing risk factors for adverse outcome in patients treated with LMWH in outpatient clinics. We determined the incidence of adverse outcome (recurrence, bleed and death) and attempted to define risk factors for VTE recurrence and adverse outcome in the PUSH study (Prospective Follow-Up Survey in VERITY Hospitals).

**Materials and Methods:** Between November 2008 and April 2009, seven hospitals enrolled 843 consecutive patients with objectively proven VTE who were seen at outpatient DVT clinics; patients were followed for a mean of 195 days.

**Results:** 221 patients were excluded (75 had no follow-up; in 50 cases, the outpatient record was incomplete; 96 cases were not treated as outpatients). The recurrence rate was 5.5%; 2.6% of patients experienced a bleeding event (1.5% minor and 1.2% major) and overall mortality was 5.8%. In patients with ‘first event’ VTE (no previous history), univariate logistic regression showed that recurrence was related to younger age (<50 years,  $p=0.03$ ) but to none of the 13 other parameters assessed. Cancer ( $p<0.001$ ), a diagnosis of cancer subsequent to VTE ( $p=0.008$ ), metastatic cancer ( $p=0.02$ ) and high quantitative D-dimer at diagnosis ( $p=0.023$ ) were predictive of an adverse event; multivariate regression confirmed cancer (OR 6.3, 95% CI 2.8–14.1), new cancer (OR 13.0, 95% CI 3.0–57.5) and high D-dimer (OR 2.7, 95% CI 1.0–6.8) were independent predictors of adverse outcome. In contrast, in patients with a previous VTE history, univariate regression identified cancer ( $p=0.002$ ) and a hormonal risk factor ( $p=0.029$ ) as predictive of an adverse event; cancer remained significant in multivariate analyses (OR 6.9, 95% CI 1.8–27.0). No factors predicted recurrence.

**Conclusions:** These results identify cancer as an important risk factor irrespective of previous VTE history, and show that high D-dimer at diagnosis is predictive of adverse outcome in patients experiencing a first VTE event.