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## Use of glucocorticoids and risk of venous thromboembolism

In this Danish population-based case-control study, the association between use of glucocorticoids and risk of venous thromboembolism was studied.

The study included 38 765 cases of venous thromboembolism and 387 650 age-matched and sex-matched controls. Conditional logistic regression, adjusted for risk factors for venous thromboembolism, was used to estimate incidence rate ratios (IRR) and 95% CI for glucocorticoid users versus non-users. Diagnoses were retrieved from the Danish national Registry of Patients, and controls were identified from the Danish Civil Registration System. Glucocorticoid use was estimated from the Danish national Database of Reimbursed Prescriptions.

Systemic glucocorticoid use was associated with an increased risk of venous thromboembolism. The risk seemed to increase with increasing cumulative dose. The highest adjusted IRR (3.06; 95% CI 2.77 to 3.38) was seen in new users of systemic glucocorticoids. New use of inhaled glucocorticoids and current use of glucocorticoids also increased the risk of venous thromboembolism. However, glucocorticoids given during hospitalisation and outpatient clinic visits were not recorded and may have contributed.

Since many illnesses and inflammatory conditions treated with glucocorticoids also may increase the risk of venous thromboembolism, the associations have to be interpreted with care. The authors state that the temporality of the association, the effect being strongest at initiation of therapy, is in line with an effect on coagulation. However, the possibility of residual confounding by disease activity must be kept in mind. Although the association may not be causal, we should be aware that patients treated with glucocorticoids may be at increased risk of venous thromboembolism.

► Johannesdottir Sigrun A, Horváth-Puhó E, *et al.* Use of glucocorticoids and risk of venous thromboembolism. *JAMA Intern Med* 2013;173:743–52.

**Eva Wikström Jonsson**

**Correspondence to** Dr Eva Wikström Jonsson, Clinical Pharmacology Unit L7:03, Department of Medicine Solna, Karolinska Institutet, Karolinska University Hospital, Stockholm SE-17176, Sweden; [eva.wikstrom-jonsson@ki.se](mailto:eva.wikstrom-jonsson@ki.se)



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