

Infection and Venous Thromboembolism: A Risk Assessment



To the Editor:

I read the paper by Cohoon et al¹ with interest. The authors conducted a case-control study to know if infection was a risk factor for venous thromboembolism. Incident deep vein thrombosis or pulmonary embolism was registered and 1:2 matching was conducted for case and control setting by considering age and sex. The authors adjusted 17 independent variables for conducting conditional logistic regression analysis. Adjusted odds ratio (95% confidence interval [CI]) of infection for venous thromboembolism was 4.5 (3.6-5.5). They also specified the risk of specific sites of infection for venous thromboembolism. I have some concerns about their study.

First, the authors adopted a conditional logistic regression model. Although 1:2 matching was conducted, the lack of control data was obvious. There is a risk of unstable estimate if the number of controls is lost. Instead, using enough numbers of controls has an advantage of stable estimate for the outcome,² especially in stratification of independent variables. Wide ranges of 95% CI would partly reflect unstable estimate.

Second, the authors did not evaluate the cause of infection in their study. Frasson et al³ conducted a survey on the cause of infection in patients with venous thromboembolism, with special reference to site of infection and immobility. They followed up for at least 3 months, and the patients with respiratory tract infections were more likely than those with

other types of infection to have pulmonary embolism. In addition, infection contributing to the pathogenesis of venous thromboembolism was significantly accelerated by immobility. As there is no definite result by a meta-analysis,⁴ further studies with special reference to immobility are needed to know the association between infection and venous thromboembolism.

Finally, Kaplan et al⁵ conducted a prospective study on the incidence of venous thromboembolism during severe sepsis and septic shock. The incidence was 37.2% (95% CI, 28.3-46.8), but the risk of mortality was not significantly associated with venous thromboembolism. I recommend that Cohoon et al include the severity of infection in relation to venous thromboembolism.

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