PCOS, hormonal contraception and venous thrombosis. A historical cohort study

Thranow Sigrid (DK) [1], Nielsen Lars Hougaard (DK) [2], Lidegaard Ojvind (DK) [3]

Context. Two recent studies found a doubled risk of venous thrombosis in women with polycystic ovary syndrome (PCOS).

Objective: To assess the risk of venous thrombosis in women with PCOS and to explore how use of hormonal contraception influences that risk.

Methods. A historical national cohort study followed in four national registries women with and without PCOS for use of hormonal contraception and a first ever venous thrombosis. Venous thrombosis was confirmed by succeeding anticoagulation therapy.

Patients. All Danish non-pregnant women 15-49 years old, free of previous thrombotic disease or cancer during the period January 2001 through December 2012.

Intervention. Risk estimates were calculated by Poisson regression, and adjusted for hormonal contraceptive use and body mass index.

Main outcome measure. A first ever confirmed venous thrombosis.

Results. Within 11,332,675 observation years, 4,184 were recorded with confirmed venous thrombosis, of which 89.663 women years and 54 venous thromboses were in women with PCOS. After adjustment for use of hormonal contraception, women with PCOS had a 1.94 (95% CI 1.49-2.52) times increased risk of venous thrombosis. The rate ratio of venous thrombosis between users of combined oral contraceptives with desogestrel or drospirenone versus levonorgestrel was still about two after adjustment for PCOS.

Conclusion. Although hormonal contraception with newer progestogens are often prescribed to women with PCOS, women with PCOS have an almost doubled risk of venous thrombosis after adjustment for use of hormonal contraception, which should be taken into consideration when deciding which type of
hormonal contraception women with PCOS should be recommended.