Polycystic ovary syndrome, hormonal contraception and thrombotic stroke. A historical cohort study

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Context. Women with polycystic ovary syndrome (PCOS) have an increased long-term risk of thrombotic stroke (TS). Combined hormonal contraception increases the same risk moderately in young women.

Objective. The aim of this study was to assess the risk of TS in women of reproductive age with PCOS and to explore how adiposity and use of hormonal contraception influence that risk.

Methods. This historical cohort study followed women with and without a PCOS discharge diagnosis, for use of hormonal contraception and a first-ever TS diagnosis from January 2001 through December 2012.

Patients. All Danish non-pregnant women 15-49 years old identified in four national registries who were free of previous thrombotic disease or cancer.

Intervention. Risk estimates were calculated by Poisson regression and adjusted for age, calendar year, education, use of hormonal contraception, and body mass index.

Results. Within 11,332,675 observation years, 2,029 were recorded with a first TS, of which 90,038 women-years and 25 TS were in women with PCOS.

The risk of TS increased 20 times with increasing age, more than halved with increasing education, and increased 70% (95% CI 1.2-2.3) with increasing body mass index. Women with PCOS had an adjusted 2.2 (95%CI 1.5-3.2) times increased risk of TS. In a sub-analysis on women with known body mass index, (n=301,514), adjustment for body mass index reduced the risk estimate of TS non-significantly by 11%.

Conclusion. Women of reproductive age with PCOS have a doubled risk of thrombotic stroke, which is not explained by higher adiposity or use of hormonal contraception by these women.