



Hormonal contraception use among teenagers linked to depression

Jacqui Wise

London

Use of hormonal contraceptives, especially among adolescents, was associated with subsequent antidepressant use and a first diagnosis of depression, a large Danish study published in *JAMA Psychiatry* has found.¹

The nationwide prospective study included all women and adolescents aged 15 to 34 years who were living in Denmark between 2000 and 2013 after excluding those with a prior diagnosis of depression or other major psychiatric disorder. A total of 1 061 997 women, followed up for an average of 6.4 years, were included in the analysis.

During the follow-up period, 55% of the women and adolescents were current or recent users of hormonal contraception. A total of 133 178 first prescriptions of antidepressants and 23 077 first diagnoses of depression at a psychiatric hospital were detected during follow-up.

The study found that the use of all types of hormonal contraceptive was positively associated with the subsequent use of antidepressants and a diagnosis of depression.

Compared with non-users, women who used combined oral contraceptives had 1.23 times higher relative risk of a first use of an antidepressant (95% CI, 1.22-1.25). The risk for women taking progestogen only pills was 1.34 fold (95% CI, 1.27-1.25). Users of a norelgestromin patch had a doubling of risk (relative risk 2.0, 95% CI, 1.76-2.18), while for users of a vaginal ring the relative risk was 1.6 and for a levonorgestrel intrauterine system the relative risk was 1.4. In each case the depression diagnoses were similar or slightly lower.

The highest risk rates were seen among adolescent girls, aged 15 to 19 years, who had 1.8 times higher risk of first use of an antidepressant using combined oral contraceptives and 2.2 times higher risk with progestin only pills. The highest risk was seen among adolescent girls using non-oral products, who had a three times higher risk for first use of an antidepressant.

The study authors said that their findings fitted in with the theory that progesterone played an important role in the cause of depression. They said that the high risk among women using the transdermal patch and vaginal ring compared with the corresponding pill was probably because they contained a higher dose of progestin rather than because of the route of administration.

The authors concluded: "Use of hormonal contraceptives was associated with subsequent antidepressant use and first diagnosis of depression at a psychiatric hospital among women living in Denmark. Adolescents seemed more vulnerable to this risk than women 20 to 34 years old. Further studies are warranted to examine depression as a potential adverse effect of hormonal contraceptive use."

1 Skovlund C, Mørch L, Kessing L, et al. Association of hormonal contraception with depression. *JAMA Psychiatry* 2016. doi:10.1001/jamapsychiatry.2016.2387.

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