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Current use of oral contraceptives and the risk of first-ever ischemic stroke: A meta-analysis of observational studies

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To evaluate the risk of first-ever ischemic stroke associated with current use of oral contraceptive pills (OCPs) and to describe how the risk was influenced by estrogen dose, progestin type and study characteristics. We obtained relevant articles published between 1970 and March 2014 by conducting a search of PubMed, Embase and the Cochrane Library. Two investigators independently identified eligible studies based on selection criteria in a two-step method. The quality of studies was assessed with the Newcastle-Ottawa scale. Pooled odds ratios were calculated with a random effects meta-analysis model. A total of 18 independent studies (three cohort studies and 15 case-control studies) were identified. The overall summary odds ratio for first-ever ischemic stroke risk associated with current OCP use compared with noncurrent OCP use was 2.47 (95% confidence interval (CI), 2.04-2.99). The risk of ischemic stroke among current OCP users decreased significantly with decreasing estrogen dose: OCPs of ≥ 50 μg ethinyl estradiol (EE), 30-40 μg EE, 20 μg EE and progestin only pills implied odds ratios of 3.28 (95% CI, 2.49-4.32), 1.75 (95% CI, 1.61-1.89), 1.56 (95% CI, 1.36-1.79) and 0.99 (95% CI, 0.71-1.37), respectively. All four generations of progestin were associated with an elevated risk of ischemic stroke and the risk of ischemic stroke among users of the fourth-generation progestins seemed to be slightly lower than those of other generations of progestins. Data from observational studies suggest that current use of modern OCPs is associated with an increased risk of first-ever ischemic stroke.

Biography

Ying Li is a Professor at Nanjing Medical University School of Public Health. She has completed over 20 granted studies in reproductive and pharmaceutical epidemiology, with over 100 papers and several patents. She studied at CDC under WHO scholarships on reproductive health surveillance and post market surveillance for the safety of drugs in 1996 and 2000. She also serves as an Associate Editor for three professional journals.

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