To the Editor:

We read with great interest the recent article by Chen et al.1 dealing with the relationship between pelvic inflammatory disease (PID) and stroke. The study demonstrated that women between age 18 to 60 years with PID were more likely to have ischemic strokes than were the control population in a 3-year follow-up period based on a nationwide population-based database. In addition, patients with PID were more likely to develop comorbidities such as coronary heart disease, diabetes mellitus, hyperlipidemia, and endometriosis than were those in the comparison cohort. This study has given us some novel insight into the prognosis of PID, where not only infertility and ectopic pregnancy may occur, but metabolic disorders, coronary heart disease, and ischemic stroke may also be part of the disease outcome.

PID, an infection of upper genital tract, occurs in 1% to 2% of women of reproductive age.2 According to the demographic information published at the website, among the 1 million beneficiaries sampled in the database whose medical records were available, women between age 18 and 60 years account for approximately 300,000 people. Surprisingly, the study cohort included 64,515 PID patients, tantamount to 20% of the population of inclusion. One fifth of the study population with PID was a substantial overrepresentation of PID prevalence. This issue was most likely caused by loose inclusion criteria for 2 reasons. First, the authors included patients with the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) codes 614, 615, and 616. Both ICD-9-CM codes 614 and 615 refer to inflammatory disease of ovary, fallopian tube, pelvic cellular tissue, peritoneum, and uterus, except cervix, respectively, which fit the diagnosis of PID. However, ICD-9-CM code 616 refers to the inflammatory disease of cervix, vagina, and vulva. These infections affect only the lower genital tract that is unrelated to or has not yet progressed to PID. Thus, it would not have been appropriate to include diseases pertinent to code 616 in this survey. Second, PID usually occurs in young and sexually active women (age 15–44 years),2 and rarely occurs in women of late, or past reproductive age, who should therefore have been excluded from this study. It would be interesting to revisit the study after revising the inclusion criteria, and re-examining whether PID patients defined by more strict criteria (ICD-9-CM codes 614 and 615, age 15–44 years) were still likely to have ischemic stroke and comorbid medical disorders.

Elevated levels of C-reactive protein were associated with chronic infection and atherosclerosis.3 Atherosclerosis affecting precerebral as well as intrinsic brain arteries and arterioles plays a key role in the pathogenesis of stroke.4 C-reactive protein levels are also correlated with severity of PID and response of treatment. Patients with tubo-ovarian abscess, an advanced form of PID, suffered from prolonged inflammatory status and higher C-reactive protein levels compared with those with mild PID.5 As patients with PID or advanced PID may be differentially prone to stroke risks, stratification of the severity is necessary. It also would be beneficial to investigate whether patients with tubo-ovarian abscess or chronic pelvic infection are more likely to have stroke than are those with mild PID and no abscess formation. This information will be useful for biomedical researchers to design and conduct prospective clinical trials in the future to elucidate better the relationship between PID and stroke.

Disclosures

None.

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doi:10.1161/STROKEAHA.111.629527
Letter by Cheong Regarding Article, "Association Between Stroke and Patients With Pelvic Inflammatory Disease: A Nationwide Population-Based Study in Taiwan"
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*Stroke*. 2011;42:e560; originally published online September 8, 2011;
doi: 10.1161/STROKEAHA.111.629527

*Stroke* is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
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Print ISSN: 0039-2499. Online ISSN: 1524-4628

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://stroke.ahajournals.org/content/42/10/e560

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