

Correspondence

A hospital-based case-control study of identifying ovarian cancer using symptom index

To the editor: It used to be regarded that ovarian cancer was a "silent killer." However, recent studies have revealed that the majority of patients with ovarian carcinoma have symptoms for at least several months prior to their diagnosis.¹⁻⁴ Dr. Kim and colleagues published an article in the December issue of Journal of Gynecologic Oncology entitled "A hospital-based case-control study of identifying ovarian cancer using symptom index."⁵ Although some data set is impressive, the title of the manuscript cannot either be supported or refuted by the analysis and may therefore be a little bit misleading.

The study included 116 women with epithelial ovarian cancer and 209 control women using questionnaires on eight symptoms. These included pelvic/abdominal pain, urinary urgency/frequency, increased abdominal size/bloating, difficulty eating/feeling full. The symptom index was considered positive if any of the 8 symptoms present for < 1 year that occurred > 12 times per month. The symptom index was positive in 65.5% of women with ovarian cancer, in 31.1% of women with benign cysts, and in 6.7% of women on routine screening (ps < 0.001). Significantly higher proportion of ovarian cancer patients were positive for each symptom as compared with control group (ps < 0.001). Also, they concluded that previous studies suggesting that specific symptoms were useful in identifying women with ovarian cancer.

However, the population of study is heterogeneous and small to represent the whole Korean population. The diagnosis is ovarian cancer in 116, benign ovarian cyst in 74, control group in 135 women. We also do not know the histological subtype of those ovarian cancers (i.e., epithelial, borderline, or stromal). The natural course of disease and response rate to symptoms index will be different from one his-

tological subtype to another. Likewise, some studies have classified the study population into three groups for comparison based on their diagnosis: borderline, early and advanced cancer.

Finally, in future publications on this topic, it would be helpful to specify very carefully the population characteristics to classify patients with ovarian carcinoma.

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In reply: A large-scale study on the role of ovarian symptom index is necessary

We appreciate the comments by Dr. Kim YT on our study. We agree to his comment that the population of our study cannot represent the whole Korean population. A population-based prospective study would be necessary to determine the usefulness of ovarian symptom index (OSI). However, it requires enormous resources to perform a large-scale prospective study. As a preparatory step to a large-scale prospective study, our study was designed as a hypothesis-generating, case-control study. It is already well-known that OSI is associated with ovarian cancer.^{1,2} However, we thought that the validation of OSI is necessary in Korean women because symptoms in English could be different from those in Korean.

Recently, results of large-scale, case-control study regarding the predictive value of OSI were published.³ Researchers conducted an in-person interview with 812 women with epithelial ovarian cancer or borderline tumor and 1,313 population-based control subjects. Although OSI was more frequently positive in women with ovarian cancer than in control, the interval from symptom onset to diagnosis was shorter than six months in over 70% women. The sensitivity and specificity of OSI was 68% and 95%, respectively. The estimated positive predictive value of OSI based on the assumed prevalence of ovarian cancer was about 1%. In other words, only one of 100 women with positive OSI actually had an ovarian cancer.

Although OSI would trigger unnecessary medical evaluations in 99 of 100 women with positive OSI, the OSI still could play a role in screening of ovarian cancer. Specifically, the OSI could improve the cost-effectiveness of ovarian cancer screening programs using CA-125 and ultrasonography (USG). For example, in the PLCO trial, nearly 29,000 women underwent CA-125 and USG to detect 29 malignant ovarian, tubal or peritoneal tumors.⁴ If the OSI was examined in women participating in PLCO trial, 20 of 29 women with malignant tumors would have positive OSI (68% sensitivity). In addition, to detect 20 women with positive OSI and malignant tumors, only 2,000 women should undergo CA-125 and USG (positive predictive value 1%).

In our study, all patients in ovarian cancer arm had an epi-

thelial ovarian cancer. Borderline ovarian tumor and non-epithelial ovarian cancer were not included in our study.

Although there is no definitive evidence supporting the benefit of OSI, we believe that the OSI should be regularly performed by the women herself like a self-breast examination because the OSI do not require any resources and is potentially beneficial. Considering the low incidence of ovarian cancer, we believe that OSI could be useful in screening of ovarian cancer. More studies on OSI in Korean women are necessary.

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