Evaluation of circulating endometrial cells as a biomarker for endometriosis

Chen Zhang

Peking University People's Hospital, China

Introduction: Endometriosis (EM) is a common disease among women of reproductive age but significantly under diagnosed in the absence of a reliable clinical marker. It has been reported that circulating endometrial cells (CECs) were present in peripheral blood of women with EM, providing clear and specific evidence of the presence of ectopic lesions. However, the clinical value of CECs is still unknown.

Methods: In this study, we established a method with high detection rate of CECs, examined the prevalence of CECs in patients with ovarian EM and compared the diagnostic performance with serum CA125, proposed a hypothesis of the pathogenesis of EM from the new perspective of CECs.

Results: The peripheral blood samples were collected from 59 participants and the blood cells were isolated for immunofluorescence staining via microfluidic chips. The cells that were positive for vimentin/cytokeratin and estrogen/progesterone receptor and negative for CD45 were identified as CECs. The detection rate of CECs reached 89.5% (17/19) in the EM group, which was significantly higher than that of the control group (15% (6/40), P<0.001) and was independent of menstrual cycle phases. Furthermore, a positive CEC assay detected 4/5 cases of stage I-II EM. In contrast, a positive CA125 test had limited value in detecting EM (13/19, 68.4%) and only detected one case of stage I-II EM.

Conclusion: In brief, CECs are a promising biomarker for EM with great potential for non-invasive diagnostic assay.

Speaker Biography

Chen Zhang is working on Ph.D. in Gynecology and Obstetrics at Peking University Health Science Center since September 2016. Her research interest has been on endometriosis and ovarian cancer, mainly focusing on biomarkers research and molecular mechanisms. Combining the characteristics of endometriosis and document reports, she and her team members found an effective and efficient method to detect and identify circulating endometrial cells in peripheral blood utilizing proprietary microfluidic chip which reveals a novel and promising diagnostic approach for endometriosis.

e: zhangchen20080925@163.com

Notes: