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Practical implications of the ADNEX risk prediction model for diagnosis of ovarian cancer

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A compelling analysis supports consideration of ADNEX in triage of women with adnexal masses

Ovarian cancer has one of the poorest prognoses of the gynecological malignancies with more than 300 000 cases worldwide.[1] Most women diagnosed with ovarian cancer will have a recurrence; additionally, remission rates, while improving, only hover around 25% for cases of advanced disease. The most common course, even with advanced genetic testing and optimising both surgical and medical treatments, is recurrence and ultimately death from disease. Although countries such as the United States have improved survival for advanced stage ovarian cancer, most women will still die due to this disease process.[2] Numerous genetic markers and advances in immunotherapy provide further avenues to improve these statistics.

Screening and early detection are the mainstay for improving global survival in ovarian cancer. Barranada and colleagues have completed a meta-analysis and systemic review of use of the Assessment of Different Neoplasia in the adnexa (ADNEX) model for predicting cancerous tumours in women with pelvic masses.[3] The authors have provided a robust, provocative, and compelling analysis of the utility of this model for practitioners in women's health. The model itself uses various characteristics (age, size of lesions and solid component, loculations, papillations, shadowing and referral to oncological or specialty centres, and with or without CA125) to predict whether a mass is malignant or benign. Other models include the risk of ovarian cancer algorithm (ROCA) model as well as the HE4 or OVA1 serum analyte tests. The ADNEX model has been evaluated in numerous studies on its ability to predict malignancy across a host of geographical locations and has been extensively published.

The authors have provided an extensive and thorough meta-analysis and review of 47 studies assessing the ability of this tool to predict both malignancy and subtype of tumour. In fact, the model can also be used to predict severity of disease as well. Most studies were completed in Europe and North Asia with minimal contribution from North or South America. Two types of studies were included: those that used CA125 as the model and those that did not. Based on the data presented,the authors elucidated a sensitivity and specificity of 94% and 77% at the 10% threshold in decision making for risk of malignancy. These results are generally good for general gynaecologists who are attempting to assess if a mass can be removed by a non-oncological surgeon or can be kept at local hospitals without a gynecological oncologist. The statistical analysis by the authors is robust and rigorous and a substantive analysis for bias was conducted by the authors. The clinical usefulness of these test as evidenced by the authors is profound in that this meta-analysis provides further evidence that the ADNEX model can help to triage practitioners to the appropriate practitioner for care, obviating the need for second surgeries or delays in management in patients with a high degree of suspicion of malignancy based on this model.

Triaging of women to the appropriate physician or surgeon is of paramount importance to efficient patient care. As healthcare systems become increasingly limited by resources, such as surgical theatre availability and staffing, having patients be appropriately triaged will become increasingly important to the delivery of healthcare. The authors have provided further evidence for the use of the ADNEX model in predicting malignant lesions in women and these data should be used in the techniques to help patients be seen by the correct physician team. Other models include the Society of Gynecologic Oncology/American College of Obstetrics and Gynecology guidelines, which are a bit more simplistic in the triage of patients with complex adnexal masses and relies mainly on menopausal status and CA125 to direct care.[4] The ADNEX model offers more analytes and more data points by which to determine and predict malignancy and may be more robust. Importantly, few authors in this study were involved initially in the development of the ADNEX test and thus may introduce some bias to the results, although the team of authors appears to have adjudicated for this appropriately. Additionally, the deployability of this test globally may be difficult in low resource settings. Very few centres in the meta-analysis were from North America and only one was from the United States, which has a high burden of ovarian cancer with an excellent infrastructure for clinical trials. In conclusion, the authors have shown in an intellectually rigorous manner, the usefulness of the ADNEX test. These data will further the ability of practitioners to predict which patients have cancer and, potentially, the extent of disease malignancy of these cancers. Practitioners should consider incorporating this test into their practice for the triage of women with adnexal masses.

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