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Identifying Signature Molecular Biomarkers in Endometrioid and Clear Cell Ovarian Carcinoma with Underlying Endometriosis

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ABSTRACT

Objective: The aim of this study is to analyse the mutations of PTEN and PI3K expression, and identification of inflammatory markers (Interleukin-6 and macrophage (CD68)) in endometrioid adenocarcinoma and clear cell carcinoma of the ovary in women with underlying endometriosis. **Methods:** We constructed a tissue microarray (TMA) slides from paraffin blocks of ovarian endometrioid and clear cell carcinomas, collected between 2007 until 2015 from the University Kebangsaan Malaysia Medical Centre Pathology labouratory. There are 19 paraffin blocks in total, which were divided into two groups; i.e., ovarian cancer with endometriosis (n=10) vs ovarian cancer without endometriosis (n=9) following analysis of each patient's medical record. Four markers were used; PTEN (phosphatase and tensin homolog), PI3K (phosphatidylinositol-4,5-biphosphate3-kinase, catalytic subunit alpha), IL-6 (interleukin-6) and CD68 (macrophage). Comparisons were subsequently made in terms of clinicopathological characteristics of the ovarian malignancy, as well as any differences in the above markers expressions between the two groups. **Results:** Expression of PI3K, PTEN interleukin-6 and CD68 were analysed by immunohistochemistry. In ovarian cancer with underlying endometriosis, we found greater loss of PTEN protein expression (100% vs 88.9%, p=0.47) and higher PI3K over expression (80% vs 77.8%, p=1.00). An upregulation of IL-6 expressions was also observed in ovarian carcinoma with endometriosis with mean score of 1.10±0.88 vs 0.78±0.67 (p=0.35). Macrophage (CD68) in contrary was expressed much less in ovarian cancer with underlying endometriosis (percentage of infiltrated cells were 20.67±15.13% vs 11.40±11.8%, p=0.16). **Conclusion:** Ovarian endometrioid adenocarcinoma and clear cell carcinoma with endometriosis expressed greater PTEN inactivation and PI3K mutation. They also demonstrated higher interleukin-6 expression.

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Utility of Mobile Platform to Enhance Cervical Screening: The ROSE Experience

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ABSTRACT

Introduction: Mobile technology has great potential to empower individuals to access healthcare. Project ROSE (Removing Obstacles to Cervical ScrEening) explores a cervical screening strategy that integrates a mobile platform that accesses a secured cervical cancer population registry powered by canSCREEN®. **Objective:** To assess utility of a mobile platform for registration, delivery of results and follow-up engagement to collectively enhance the cervical screening pathway. **Method:** Participant registration was done within five community health clinics in Malaysia through the mobile platform and the duration to complete registration was recorded on random days, at random times. Cervical screening test results were sent to participants' mobile phone and telephone surveys were conducted with 1,000 randomly selected participants between ages 30 to 65 years to assess acceptability towards utility of a mobile platform. Participants who had an abnormal result were navigated for follow-up through their mobile phone and data was recorded to assess follow-up engagement. **Results:** Using the mobile platform, the average duration to complete registration was 2.5minutes. Telephone surveys found that 93% of participants preferred the ROSE method to cervical screening because of fast delivery of results, while 86% were because they could receive their results via mobile phone. Among participants who had an abnormal result, 89% engaged in care whereby 67% initiated the call to schedule their own appointment of which 67% called within the same day they received their results. **Conclusion:** The integration of a mobile platform can ease registration in busy clinical settings, optimize results delivery and facilitate follow-up engagement to collectively enhance cervical screening.