IGF-1Ea influence on cell proliferation, apoptosis and migration in endometrioid endometrial cancer (EEC)

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ABSTRACT

Introduction: IGF-1 isoforms exhibit varying activities in different types of malignancies, as evidenced by their diverse expression patterns in in-vitro models. Their expression has not been thoroughly studied clinically. **Objective:** This study aimed to determine the IGF-1Ea isoform in endometrioid endometrial carcinoma (EEC) patients, we also investigated the roles of IGF-1Ea through in-vitro approaches. **Materials and Methods:** A case-control study was carried out at Universiti Kebangsaan Malaysia Medical Centre (UKMMC); where endometrial samples were collected from 45 women with EEC and 30 with non-cancerous endometrium (control group) to investigate the local expression of IGF-1Ea transcripts. Additionally, EEC cell lines were functionally studied by silencing IGF-1Ea; we then measured cell proliferation, apoptosis and migration after siRNA-mediated IGF-1Ea knockdown. **Results:** EEC demonstrated an enormous rise in IGF-1Ea mRNA transcript levels compared to the control group ($P<0.05$). Additionally, certain clinicopathological features were observed to be associated ($P<0.05$). IGF-1Ea silencing in in-vitro studies diminished cancer cell proliferation and migration while raising cell death substantially ($P<0.05$). The data indicated that the expression of IGF-1Ea at the local level could impact endometrial function and lead to adverse outcomes in EEC. **Conclusions:** The study emphasises the notable presence of the IGF-1Ea isoform in EEC and its possible involvement in cancer progression. Comprehending these molecular pathways could lead to the development of specific treatments and enhanced patient outcomes.