Epidemiological Risk Modelling for Endometrial Cancer

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Background: Endometrial cancer (EC) is the most common gynecological cancer. More than 40% of EC cases are attributed to modifiable risk factors that disrupt hormone levels. Current EC screening strategies like endometrial biopsies, although effective, are not feasible to provide to the entire asymptomatic, general population. Identification of at-risk populations would help target screening and reduce the incidence of EC while also reducing the mental and physical burden of screening. Risk models can identify and direct screening to high-risk individuals in the general population based on EC risk factors. Several models have been proposed but none have been validated in a Canadian population.

Objective: To reproduce and validate previously developed risk models in a Canadian cohort and build the first sex/gender and socioeconomic status (SES) indices for EC to be used as risk model predictors.

Methods: To validate pre-existing risk models for EC, the Alberta, Ontario, and British Columbia cohorts from the Canadian Partnership for Tomorrow's Health (CanPath) dataset were used. We included anyone with an intact uterus and no EC symptoms. Model performance will be assessed through discrimination and calibration measures. The sex/gender index will be built in the CanPath dataset with logistic regression coefficients computed for variables provided by a previous sex/gender index. Similarly, the SES index will be built in the CanPath dataset using principal component analysis loadings computed for variables obtained from a previously built SES index.

Preliminary Results & Discussion: We reproduced the models and computed risk scores for participants in CanPath. We are linking CanPath to provincial data to ascertain EC diagnosis outcomes for each participant to validate the model's predictions. Our completed sex/gender and SES indices will be assessed as predictors for EC risk in our models. Including disparity-related indices in models improves generalizability and predictive accuracy.