INAHTA Brief

Issue 2015/047

***Title*** Health Risk Assessment (HRA) Module for Breast Cancer

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***Reference*** Health Technology Assessment Report
http://www.moh.gov.my/index.php/pages/view/113

**Aim**

To assess the effectiveness in term of predictive accuracy of breast cancer risk assessment/prediction models among women; and to assess the safety, organizational, ethical issues and economic implications related to risk assessment/prediction models for breast cancer among women

**Conclusions and results**

There was sufficient good level of retrievable evidence for breast cancer risk prediction model. There were six models identified for predicting breast cancer risk with Gail model is the most widely studied and validated model in various population. The Gail model appeared to have good calibration in validation studies done cross-population; however there is considerable heterogeneity across studies. This model showed moderate performance in terms of discriminatory ability. For other risk prediction models, there was insufficient good level of retrievable evidence with only one study each of those other models (CARE model, model by Petracci, model by Pfeiffer, Vermont model, model by Anothaisintawee and BWHS model). The models were well calibrated in the validated population however appeared modest in discriminating woman who will be having breast cancer, than for those who will not in the study population.

There was insufficient evidence on the safety aspect of cancer risk prediction models for the detection of women who will develop breast cancer. Although there was minor adverse psychological sequale reported among high risk women who demonstrated to be five times more likely to have increased anxiety, it may be considered relatively safe.

There was no retrievable evidence on economic evaluation of health risk assessment or risk prediction model for breast cancer, or cost implication involved in developing a new risk prediction model without genetic component for breast cancer retrieved. The cost involved in validating a model by a prospective cohort validation study could be very costly depending on the number of study participants and years of follow up. However potential direct cost implicated to the Executive Summary designing, developing, testing and commissioning of available one breast cancer prediction model was given approximately at RM75, 000.

**Recommendations (if any)**

Although the above review showed that the Gail model had good calibration and moderate discriminative ability, it is not suitable to be introduced as one of the strategy in the prevention of breast cancer under the Malaysian National Cancer Control Programme yet as it needs further validation until a well-fitted model that would have better predictive ability tailored to Malaysian population established. In addition, this model needs continual validation to determine the consistency of its performance.

**Methods**

Electronic databases such as MEDLINE, PubMed, EBM Reviews-Cochrane Database of Systematic Reviews, EBM Reviews-Cochrane Central Register of Controlled Trials, EBM Reviews-Health Technology Assessment, EBM Reviews-Cochrane Methodology Register, EBM Reviews-NHS Economic Evaluation Database, Database of Abstracts of Reviews of Effects (DARE), Horizon Scanning database, INAHTA database, HTA database and FDA database were searched. Additional articles were identified from bibliographies of retrieved articles and hand-searching of journals. General search engine was used to get additional web-based information. No limits were applied to the search. Studies were selected based on inclusion and exclusion criteria. All relevant literature was appraised using the Critical Appraisal Skills Programme (CASP) tool. All full text articles were graded based on guidelines from the U.S / Canadian Preventive Services Task Force.

**Further research/reviews required**

Needs further validation until a well-fitted model that would have better predictive ability tailored to Malaysian population established. In addition, this model needs continual validation to determine the consistency of its performance

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