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Body mass index and breast cancer risk in Korea: meta-analysis

M.C. Chang[1], W.J. Son[1], D.J. Shin[1]. [1]*Dankook University Hospital, Department of Breast and Endocrine Surgery, Cheonan, South Korea*

Background: The incidence of breast cancer in Korea is rapidly increasing recently. Body mass index (BMI, kg/m^2) is one of the risk factors of breast cancer, especially in the postmenopausal women. In Korea, about sixty percents of breast cancer patients are premenopausal status. So the role of obesity would be different to the western country. We undertook a meta-analysis to verify the relation between BMI and breast cancer risk according to the menstrual status.

Material and Methods: We retrieved the Korean literature using PubMed (http://www.pubmed.org/) and KoreaMed (http://www.koreamed.org/) database concerning the relationship between BMI and breast cancer in Koreans from 1994 to 2008. BMI more then 24 kg/m^2 was categorized as high. The overall effect size was represented by common odds ratio (OR). Heterogeneity test, sensitivity test and Egger's test of publication bias was conducted.

Results: The materials were fourteen studies with a total 5,534 breast cancer cases and 6,333 controls. The overall common OR (95% confidence interval) was 1.42 (1.25–1.61). The OR of postmenopausal women was 1.41 (1.19–1.68) and the OR of premenopausal women was 1.34 (1.13–1.59).

Conclusions: This study shows that the high BMI is the risk factors of breast cancer in Korea, regardless of menopausal status.

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A novel support tool for Breast Multidisciplinary Meetings: an advanced evidence based computer decision support technology

V. Patkar[1], D. Acosta[2], J. Fox[3], A. Jones[4], T. Davidson[5], M. Keshtgar[5]. [1]*UCL, Cancer Institute, london, United Kingdom;* [2]*UCL, Cancer Institute, London, United Kingdom;* [3]*Oxford University, Engineering Science, Oxford, United Kingdom;* [4]*Royal Free Hospital, Oncology, London, United Kingdom;* [5]*Royal Free Hospital, Breast Surgery, London, United Kingdom*

Background: Breast multidisciplinary meetings (MDMs) provide the key forum where all important patient management decisions are taken. MDMs are widely accepted in many countries as the standard of care however there is an urgent need for better tools for supporting andmonitoring these heavily loaded meetings to maximize their efficacy. Advanced computerised decision support (CDS) technology could offer many of these services to actively support busy MDMs. We present a novel breast MDM support tool which integrates a CDS system into an electronic patient record to assist breast multi disciplinary team in making evidence based, transparent treatment decisions.

Methods: The Multi-disciplinary meeting Assistant and Treatment sElector (MATE) is a tool designed to assist breast clinicians in making management decisions for their patients in MDM. MATE uses logic based computational framework to provide a clinical guideline-based decision support system for breast cancer MDM. MATE evaluates patient's clinical facts and suggests optimal management options according to incorporated national and international clinical guidelines. The evidence base used in MATE can be updated as and when new evidence is published. MATE recommendations are not binding and the final decision is taken by respective breast Multidisciplinary MATE facilitates the flexible conduct of MDM. Additionally, it highlights if the patient is eligible to take part in any local, national or international clinical trials. MATE is implemented in the breast unit of Royal Free hospital, London for its pilot testing. In the evaluation study, the data of 500 consecutive breast patients presented at our MDM along with their documented MDM recommendations are entered in MATE. MDM recommendations and MATE suggestions are analysed.

Results: MATEsystem is able to suggest the treatment recommendations in concordance with breast MDT in majority of the cases (89%). MATE also identified 60% more patients suitable for ongoing clinical trials. Deviations that occur specially in unaided MDMs can be minimised using electronic data capture and decision support system like MATE. MATE also significantly improved the transparency and the documentation of MDM outcomes.

Conclusion: This evaluation study has shown the feasibility of implementing MATE into MDM and its potential to improve certain aspects of MDM by helping overburdened clinicians. Further evaluations of MATE in a randomised controlled trial are under way.

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Local recurrence as outcome indicator in breast cancer care: a population based study

M. Van der Heiden-van der Loo[1], V. Ho[1], R. Damhuis[2], S. Siesling[3]. [1]*Comprehensive Cancer Center Middle Netherlands, Cancer Registry, Utrecht, The Netherlands;* [2]*Comprehensive Cancer Center Rotterdam, Cancer Registry, Rotterdam, The Netherlands;* [3]*Comprehensive Cancer Center North East, Cancer Registry, Enschede, The Netherlands*

Background: Quality of care indicators defined by professionals have been adopted by the Netherlands Health Care Inspectorate (IGZ). One of the outcome indicators in the treatment of breast cancer care is *Local recurrence of breast cancer within five years of initial diagnosis*. In this study we present the results on this outcome indicator.

Material and Methods: All breast cancer patients diagnosed in 2003 with primary breast cancer who underwent surgery were extracted from the Netherlands Cancer Registry. Patients with distant metastasis at diagnosis or macroscopic tumor residue after surgery were excluded. The remaining 10,284 patients were assigned to the hospital of surgical treatment. Trained registration clerks retrieved data on follow up from medical records. 384 patients were excluded, 162 (1.6%) because of lack of information, 222 (2.1%) because of definition of the indicator. The health care outcome indicator was calculated as defined by IGZ; the number of local recurrences divided by the total number of patients treated in the hospital, separately for patients with breast conserving surgery and patients with mastectomy. The results are presented in forest plots and funnel plots. These plots show for every hospital the proportion of local recurrences (and the confidence interval) in relation to the overall proportion.

Results: In total 9990 patients treated in 99 hospitals were included in the analyses. Over half of the patients underwent breast conserving surgery (5314; 54%). This varied over hospitals from 20% to 90%. The number of patients treated per hospital varied from 15 to 275.

In 266 patients a local recurrence occurred (2.7%, 95% CI 2.4−3.0). For patients with breast conserving surgery the proportion was 2.4% (95% CI: 2.0−2.8). For patients with mastectomy the proportion was 3.0% (95% CI: 2.7−3.57). Five hospitals had an higher proportion of local recurrences than expected based on the average after breast conserving surgery. Seven hospitals had an higher than expected proportion of local recurrences after mastectomy.

Conclusions: The local recurrence rate varies between hospitals. Only a few hospitals have a significantly higher number of recurrences than expected, due to the small number of patients per hospital and the low number of recurrences. However, this can be expected when testing 99 hospitals based on a 95% confidence interval. Therefore, the proportion of recurrences seems of little value as a quality of care indicator.

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Obesity as a risk factor of earlier occurrence of contralateral breast cancer

M. Mazur-Roszak[1], M. Litwiniuk[1], V. Filas[1], S. Grodecka-Gazdecka[1]. [1]*Poznan University of Medical Sciences, Chair of Oncology, Poznan, Poland*

Background: Obesity is a risk factor of many diseases, such as: diabetes, hypertension or ischaemic heart disease. It also increases the risk of breast cancer for women over 50 years of age. Recent investigations indicated that proper life style and decrease of body weight after breast cancer treatment may decrease the risk of disease relapse.

Bilateral, metachronous breast cancer seems to be a good model for analysing the relationship between obesity and breast cancer.

Purpose: To verify whether contralateral breast cancer in obese patients appears earlier than in women with normal body mass index. Additionally, to analyse selected pathological and clinical features present in both groups.

Material and Methods: History of 135 patients with bilateral breast cancer was analysed retrospectively. Metachronous breasts were detected in 95 cases. They were divided into three groups according to the universally applied criteria: normal weight (BMI < 25kg/m^2), overweight (BMI 25–29.9 kg/m^2), obesity (BMI $\geqslant$ 30 kg/m^2).

Immunostaining for expression of estrogen and progesterone receptors was performed using monoclonal antibodies from DakoCytomation. The EnVision detection system was applied. HER2 status was analysed using HerceptTest TM (ICH), and IHC2+results were confirmed with FISH test.

Results: From all groups with bilateral breast cancer (n = 135), an overweight condition was found in 36%, and obesity in 23% of patients. Patients from the obesity subgroup more often had tumors with positive expression of estrogen and progesterone receptors and with overexpression of HER2.

In the group with metachronous cancers (n = 95) 44% of patients had normal weight. In this group, cancer of the second breast was detected