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Changes in eating habits and food preferences in breast cancer patients undergoing adjuvant chemotherapy: The "CHANGE" prospective study

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Background: Food habits change in early breast cancer (EBC) patients (pts) during chemotherapy has been poorly studied in literature. Primary aim of this study was to evaluate food preferences and consumption of EBC pts before and after adjuvant chemotherapy.

Methods: We conducted a prospective cohort study at Medical Oncology Unit and Breast Unit of ASST Spedali Civili of Brescia (Italy). From April 2014 to June 2018 205 EBC pts were enrolled and interviewed by a dietician to assess quantity and frequency of several foods, soft drinks and alcoholic beverages intake. Additional 205 EBC pts, who were not interviewed by the dietician, were selected as control group.

Results: A statistically significant reduction of the following foods and beverage was reported after chemotherapy: pasta or rice (p < 0.0001), bread-sticks/crackers (p < 0.0001), red meat (p < 0.0001), fat salami (p < 0.0001), lean salami (p < 0.0001), fresh cheese (p = 0.039), aged cheese (p = 0.017), yogurt (p = 0.022), sugar (p < 0.0001), soft drinks (p < 0.003), alcoholic beverages such as wine (p < 0.001), beer (p < 0.0001), schnapps (p < 0.0001), and condiments such as oil (p = 0.020) and butter (p = 0.014). Conversely, fruit consumption consistently increased (p < 0.001). As a consequence of these food habits changes body weight did not increase, despite reduction in physical activity. Body weight remained stable also in the control group, indirectly suggesting that food habit variation was not influenced by the dietician.

Conclusions: This prospective study shows that EBC patients tend to adopt "healthier dietary patterns" during adjuvant chemotherapy leading to a non-change in body weight, despite reduction of physical activity.

Clinical trial identification: NCT03210441.

Legal entity responsible for the study: Alfredo Berruti.

Funding: Has not received any funding.

Disclosure: All authors have declared no conflicts of interest.

Beneficial effects of exercise on oncology - Movis: ‘Movement and Health Beyond Care’

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Background: Movis: ‘Movement and Health Beyond Care’ is a 3-year randomized controlled trial aiming to educate cancer patients after adjuvant therapy on the benefits of personalized physical activity (PA) and a proper nutritional plan.

Methods: In this project, breast cancer (BC) patients who consent to participate will be randomized to Interventional Arm (A), consisting of 3-months of Movis Training, or Control Arm (B), consisting of standard care with no supervised PA. The Movis Training consists of 3-months of aerobic training (2 d/week of supervised training and 1 d/week of unsupervised exercise) with an increase in exercise intensity (40-70% Heart Rate Reserve) and duration (20-60 min). Ad interim analyses every 3-months up to 1 year will be included. The first cohort of eligible BC survivors were enrolled in January 2020 and carried out the Movis Training even during the COVID-19 pandemic. The primary outcome is improvement of Quality of Life (QoL) assessed by European Organization for Research and Treatment of Cancer QoL (EORTCQLQ-C30). The secondary outcomes are improvement of health-related QoL parameters such as: PA level (International Physical Activity Questionnaire; SenseWear Armband), fitness (VO2max), flexibility, strength, psychological well-being (Psychological distress Inventory; Profile of Mood States and diet habit (DianaWeb, MEDIET modified and recall 24h); Anthropometric measurement, Body mass (kg); BMI (kg/m2); body composition.

Results: The expected improvement (mean ± SD) of the QoL in Arm A at 3-months is 15.1 ± 17.7, while in Arm B is 6.1 ± 17.1 (Cohen d effect size = 0.51, medium effect). Using a t test for independent samples, with 0.05 alpha and 0.80 1-beta will require 60 subjects per group. Considering an expected drop-out of 30%, a total of 172 patients will be recruited.

Conclusions: The targeted exercise oncology through multidisciplinary team would like to provide a coordinated program of cancer care to improve health care quality, improve prognosis, increase survival times and QoL and reduce the risk of BC recurrence.

Table 237P: Mendelian randomization estimates of the causality between breast cancer and breast cancer risk.

| Outcome               | IVW method OR (95% CI) | P-value | MR-Egger OR (95% CI) | P-value | Weighted median method OR (95% CI) | P-value |
|-----------------------|------------------------|---------|----------------------|---------|-----------------------------------|---------|
| Breast cancer overall | 1.0667 (1.0200, 1.1155) | 0.0047  | 1.0450 (0.8351, 1.3077) | 0.0709  | 1.0742 (1.0226, 1.1283) | 0.0043  |
| ER-positive breast cancer | 1.0881 (1.0318, 1.1474) | 0.0018  | 1.0901 (0.8352, 1.4227) | 0.5414  | 1.0992 (1.0346, 1.1678) | 0.0022  |
| ER-negative breast cancer | 1.0242 (0.9609, 1.0917) | 0.4628  | 0.8817 (0.6507, 1.1947) | 0.4376  | 1.0063 (0.9275, 1.0918) | 0.8793  |
Legal entity responsible for the study: Elena Barbieri.

Funding: Has not received any funding.

Disclosure: All authors have declared no conflicts of interest.

https://doi.org/10.1016/j.annonc.2020.08.359

Impact of clinical characteristics, patients’ perception of treatment goals and endocrine therapy history on HRQOL in HR+, HER2- early stage breast cancer patients

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Background: Among patients [pts] with early-stage HR+, HER2- breast cancer [BC], this study aimed to measure associations of clinical characteristics, pts' perception of treatment [tx] goals and endocrine therapy [ET] history on pts' health-related quality of life [HRQOL].

Methods: A multinational (France, Germany, Italy, Spain, UK, Japan and US) survey of pts diagnosed [dx] with stage I-III HR+, HER2- BC was conducted from June to October 2019. Pts identified by their physician were to complete a pen and paper questionnaire that included the FACT-G and questions on awareness of tx goals. Four separate multivariable linear regression analyses were conducted to measure the association between patients' clinical characteristics and ET history on each of the 4 FACT-G domain scores: Physical Wellbeing (PWB), Social/Family Wellbeing (SWB), Emotional Wellbeing (EWB) and Functional Wellbeing (FWB). Regression coefficients are reported where p values <0.05. A positive coefficient implies higher HRQOL.

Results: 1152 pts were recruited by 320 physicians. PWB (n=1103) score was impacted if pts currently receiving tamoxifen (+2.02), if BC dx Stage IIIB/C (-2.94). PWB (n=1103) score was impacted if pts were older (-0.10), by time since dx (+0.002), if pre/peri-menopausal (-1.76), if BC dx Stage IIIA or IIIB/C (-2.32) and -2.38) and if pts felt goal of their tx was to stop BC from progressing (-3.00). SWB (n=1102) score was impacted if pt currently receiving tamoxifen (+2.02), if BC dx Stage IIIB/C (-2.69) and if pts felt goal of their tx was to prevent BC returning after surgery (+1.19). SWB (n=1103) score was impacted by time since dx (+0.001), if BC dx Stage IIIB/C (-1.87), or if pts felt goal of their tx was to stop BC from progressing (-2.94). FWB (n=1103) score was impacted if pts were older (-0.10), by time since dx (+0.002), if pre/peri-menopausal (-1.76), if BC dx Stage IIIA, IIIB/C or IIIB/C (-2.18, -3.09, -4.07), if pts felt goal of their tx was to stop BC from progressing (-2.63) or increase length of life (-1.16).

Conclusions: The 4 FACT-G-HRQOL domain scores were impacted by stage of BC at diagnosis, ET history and pt perception of tx goals. This suggests that earlier diagnosis and positive reinforcement of tx goals could have a positive impact on HRQOL.

Legal entity responsible for the study: Adelphi Real World.

Funding: Eli Lilly and Company.

Disclosure: R. Williams: Honoraria (institution), Eli Lilly have paid Adelphi Real World a fee for conducting this research and drafting this abstract: Eli Lilly and Company. J. Brown: Shareholder/Stockholder/Stock options, Full/Part-time employment: Eli Lilly and Company. R. Wild: Honoraria (institution), Eli Lilly have paid Adelphi Real World a fee for conducting this research and drafting this abstract: Eli Lilly and Company. E. Clayton: Honoraria (institution), Eli Lilly have paid Adelphi Real World a fee for conducting this research and drafting this abstract: Eli Lilly and Company. M. Method: Shareholder/Stockholder/Stock options, Full/Part-time employment: Eli Lilly and Company. A. Rider: Honoraria (institution), Eli Lilly have paid Adelphi Real World a fee for conducting this research and drafting this abstract: Eli Lilly and Company.

https://doi.org/10.1016/j.annonc.2020.08.360

Germline genetic features of Chinese patients with breast cancer

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Background: Breast cancer, the most common malignancy in females, has an estimated 5-10% hereditary predisposition. The field of germline genetic testing for breast cancer risk has evolved substantially in the last decade. However, there is still lack of germline genetic profiles for breast cancer in the Chinese population.

Methods: The study included 1235 Chinese patients with breast cancer. Germline DNA samples were sequenced using a next-generation sequencing (NGS) multi-gene panel. The primary outcome was identification of a pathogenic germline mutation.

Results: Of 1235 subjects who underwent clinical germline sequencing, 100 (8.1%) had pathogenic germline mutations and 419 (33.9%) had variants of uncertain significance. 60 (4.9%) subjects who had pathogenic germline mutations were less than 50 years old. BRCA1 mutations were identified in 44 (3.6%) subjects and 34 (2.8%) had BRCA2 mutations; 19 (1.5%) subjects had germline mutations related to homologous recombination repair (HRR) [4 with mutations in BRAD1, 4 with mutations in CHEK2, 4 with mutations in PALB2, 2 had mutations in ATM, 2 had mutations in BLM, 2 had mutations in BTP1, 1 had a mutation in FANCA]; 2 (0.2%) had mutations related to lymph syndrome (both with mutation in NSH); 4 had other germline mutations (CDKN2A, FLCN, SDHA, SDHC).

Conclusions: In Chinese breast cancer patients, nearly 1 in 10 individuals had germline mutations, mainly in BRCA1/2 and HRD related genes.

Legal entity responsible for the study: Zhujiang hospital.

Funding: Has not received any funding.

Disclosure: All authors have declared no conflicts of interest.

https://doi.org/10.1016/j.annonc.2020.08.362

A multinational-real-world study on HR+, HER2- early stage breast cancer patients’ disease awareness, satisfaction, and involvement in treatment decisions

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Background: Among patients [pts] diagnosed with early-stage HR+, HER2- breast cancer (BC), this study aimed to describe awareness, information sources, satisfaction and degree of involvement in treatment decisions.

Methods: A multinational (France, Germany, Italy, Spain, UK, Japan and US) survey of pts diagnosed with stage IIII HR+, HER2- BC was conducted from June to October 2019. Pts identified by their physician were invited to complete a pen and paper questionnaire with questions on awareness of 4 aspects of their BC (stage, nodal status, HER2 and HR status), information sources used, satisfaction, and involvement in treatment decisions for their BC.

Results: 1152 pts completed the questionnaire (mean age 59 years; 33% with degree education; 31% pre/peri-menopausal and 1% male; Stage at diagnosis: I 30%, II 48%, III 11%). 90% of all pts cited their doctor as an information source. The second most commonly used source was the internet. 3% of all pts reported that they have close friends for post-menopausal pt (39%). 71% who very much agree with the statement ‘I am satisfied with how well I am coping with my illness’ feel they are actively involved in treatment decisions compared to 44% of who do not agree at all with the statement.

Conclusions: A high proportion of pts satisfied with how they were coping with their illness were actively involved in their treatment decisions. Knowledge and involve-ment were highest in pts with degree education and amongst pre/peri-menopausal pts, suggesting there may be a need to raise knowledge and awareness in older pts or those without a degree education.

Legal entity responsible for the study: Adelphi Real World.

Funding: Eli Lilly and Company.

Disclosure: A. Rider: Honoraria (institution), Eli Lilly have paid Adelphi Real World a fee for conducting this research and drafting this abstract: Eli Lilly and Company. M. Method: Shareholder/Stockholder/Stock options, Full/Part-time employment: Eli Lilly and Company. R. Williams: Honoraria (institution), Eli Lilly have paid Adelphi Real World a fee for conducting this research and drafting this abstract: Eli Lilly and Company. J. Piercy: Honoraria (institution), Eli Lilly have paid Adelphi Real World a fee for conducting this research and drafting this abstract: Eli Lilly and Company. E. Clayton: Honoraria (institution), Eli Lilly have paid Adelphi Real World a fee for conducting this research and drafting this abstract: Eli Lilly and Company. J. Brown: Shareholder/Stockholder/Stock options, Full/Part-time employment: Eli Lilly and Company.

https://doi.org/10.1016/j.annonc.2020.08.361

Reclassification of variants of unknown significance in BRCA 1/2 genes for the improvement of care quality in oncological genetic council units

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Background: The detection and correct interpretation of a mutation as a variant of unknown significance (VUS) is one of the most challenging points in genetic council units (GCU). In the context of hereditary breast and ovarian cancer syndrome (HBOC),