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Physicians' knowledge, practice and attitudes on fertility and pregnancy-related issues in young women with advanced breast cancer: Results of the ABC6 and ABC7 survey

S. Nardin¹, L. Arecco², V. Delucchi³, E. Blondeaux⁴, M. Stana⁵, L.D.M. Leite⁶, L.N. Weis⁷, G.H. Pham⁸, A. Daneri⁹, F. Bruzzone⁹, A. Meacci¹⁰, C. Molinelli¹¹, M.G. Razeti¹², M. Perrona¹³, S. Paluch-Shimon¹⁴, A.H. Partridge¹⁵, F. Cardoso¹⁶, T. Spanic¹⁷, J. Kufel-Grabowska¹⁸, M. Lambertini¹²

¹Division of Medical Oncology, Maggiore University Hospital, Novara, Italy; ²Academic Trials Promoting Team, Université libre de Bruxelles (ULB), Hôpital Universitaire de Bruxelles (H.U.B), Institut Jules Bordet, Bruxelles, Belgium; ³Epidemiology Unit, IRCCS Ospedale Versità degli Studi di Genova, Genoa, Italy; ⁴Epidemiology Unit, IRCCS Ospedale Policlinico San Martino, Genoa, Italy; ⁵Department of Medical Oncology, Elysee Hospital, Alba Iulia, Romania; ⁶Department of Medical Oncology, A.C. Camargo Cancer Center - Unidade Antonio Prudente, Sao Paulo, Brazil; ⁷Clinical Oncology Department, Hospital Brasilia - Dasa Oncology, Brasilia, Brazil; ⁸Department of Oncology and Hematology, Vinmec International Hospital, Hanoi, Vietnam; ⁹DiMI, Università degli Studi di Genova e Ospedale Policlinico San Martino IRCCS, Genoa, Italy; ¹⁰Department of Oncology Universita degli Studi di Roma Tor Vergata, Rome, Italy; ¹¹Dipartimento di Oncologia Medica 2, IRCCS AOU San Martino - IST-Istituto Nazionale per la Ricerca sul Cancro, Genoa, Italy; ¹²Clinica di Oncologia Medica, IRCCS AOU San Martino - IST-Istituto Nazionale per la Ricerca sul Cancro, Genoa, Italy; ¹³Oncology Unit, Sacro Cuore di Gesu', Gallipoli, Italy; ¹⁴Oncology, Hadassah University Hospital - Ein Kerem, Jerusalem, Israel; ¹⁵Medical Oncology, Dana-Farber Cancer Institute, Boston, United States of America; ¹⁶Breast Unit, ABC Global Alliance, Lisbon, Portugal; ¹⁷Europa Donna - Slovenia, Europa Donna - Slovensko zdruzenje za boj proti raku dojk, Ljubljana, Slovenia; ¹⁶Chemotherapy Department, Medical University of Gdansk, Gdansk, Poland

Background: Fertility and pregnancy-related issues are critical for young patients with breast cancer. Very limited evidence exists on physicians' knowledge, practice and attitudes on dealing with these concerns in the specific group of patients with advanced disease.

Methods: A 26-item questionnaire was administered electronically in December 2023 to physicians who attended the ABC6 congress (virtually in November 2021) and those who were registered to the ABC7 congress (on-site in November 2023). The questionnaire was divided into 3 main sections: 1. demographic, medical training, and background information; 2. knowledge, practice, and attitudes of physicians towards fertility preservation and pregnancy-related issues in patients with advanced breast cancer; 3. approach to hypothetical clinical cases.

Results: A total of 133 physicians completed the survey. Median age of responders was 46 years (IQR: 38-55 years); among them, 76.7% were female. Most physicians reported discussing always (40.6%) or usually (36.1%) the possible treatment-related loss of ovarian function in patients with advanced breast cancer. Regarding fertility preservation and pregnancy-related issues, 23.3% of responders would always feel comfortable discussing these topics with young patients with advanced breast cancer, and 45.9% would feel comfortable depending on the clinical situation. A total of 20.3% responding physicians reported to not prescribe any type of contraception to pre-menopausal patients. The main concern in discussing oncofertility in patients with advanced breast cancer was the severe prognosis of the disease in most cases (35%). Overall, in answering the 6 hypothetical clinical cases, Fleiss' Kappa's concordance of responding participants was 0.134, resulting in a slight agreement.

Conclusions: It is essential to develop recommendations and to increase physician awareness on how to address fertility and pregnancy-related issues in patients with advanced breast cancer, especially as oncological treatments continue to improve, resulting in longer survival and, in some cases, durable remission.

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Predicting health related quality of life in breast cancer: The EORTC BALANCE study

<u>T.G.W. van der Heijden</u>¹, N.J. Hubel², K.M. de Ligt³, V. Arndt⁴, H.M. Verkooijen⁵, G. Velikova⁵, M. Hoedjes⁷, B. de Rooij⁸, B. Holzner², L.V. Van De Poll-franse¹

¹Psychosocial Research and Epidemiology Department, NKI-AVL - Netherlands Cancer Institute/Antoni van Leeuwenhoek Hospital, Amsterdam, Netherlands; ²University Hospital of Psychiatry II, Medical University of Innsbruck, Innsbruck, Austria; ³Psychosocial Oncology and Epidemiology, NKI-AVL - Netherlands Cancer Institute/Antoni van Leeuwenhoek Hospital, Amsterdam, Netherlands; ⁴Unit of Cancer Survivorship, Division of Clinical Epidemiology and Aging Research, DKFZ - German Cancer Research Center, Heidelberg, Germany; ⁵Division of Imaging and Oncology, University Medical Center Utrecht, Utrecht, Netherlands; ⁶Leeds Institute of Medical Research, St. James's University Hospital, Leeds, United Kingdom; ⁷Center of Research on Psychological disorders and Somatic diseases, Department of Medical and Clinical Psychology, Tilburg University, Tilburg, Netherlands; ⁸Research and Development, IKNL - Netherlands Comprehensive Cancer Organisation, Utrecht, Netherlands

Background: Survival and treatment response are common outcomes of prediction in oncology. Predicting health-related quality of life (HRQoL) may help tailor supportive care to individual needs and assess the impact of treatments. However, the use of HRQoL in prediction models is still emerging. The EORTC Big dAta in patients with breast cANCEr (BALANCE) study aims to develop clinically relevant HRQoL predictions for early-stage breast cancer (BC) patients using both classical statistical and artificial intelligence (AI) methods. First, the next assessment will be predicted.

Methods: International real-world and trial data from 9 countries including HRQoL (EORTC QLQ-C30 and -BR23) has been pooled and harmonized into a large database, currently consisting of 5,728 stage I-IIIA BC patients and 26,702 HRQoL assessments across 142 variables, covering HRQoL, disease, treatment characteristics, and demographics. For each patient, pairs of previous and next HRQoL assessments were analyzed, incorporating time differences between assessments. The QLQ-C30 scales used as outcome were dichotomized based on clinically relevant thresholds. K-nearest neighbour, mean and iterative imputation was used. For AI models, the Histogram XGBoost Classifier (HXGB) and Extra Tree Regressor (ETR) were selected, using an 80/20% training-test split with 10-fold cross-validation. For classical statistical modeling, multilevel multivariate imputation by chained equations (MICE), logistic and linear regression modeling are in progress and will be presented in May 2025. Feature importance analysis for AI methods is ongoing.

Results: A reference model assuming no change in HRQoL from previous time-point (last observation carried forward) achieved a mean ROC AUC of 0.62-0.76 across all QLQ-C30 scales. HXGB outperformed the reference model with a mean ROC AUC of 0.85-0.94, while ETR achieved a mean ROC AUC of 0.75-0.88 across all C30 scales.

abstracts

Conclusions: The BALANCE study shows promising results for BC HRQoL prediction. Our next steps are to predict all the C30 and BR23 domains using other (dynamic) models and extending the prediction timeline. Improving the usability and interpretability of the models for both clinicians and patients can aid implementation and potentially improve HRQoL.

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Digital Patient-Reported Outcomes in Cancer Care: Analysis of Quality of Life and Symptom Trajectories Using a Mobile Health Platform

G.H. Prakash¹, S. Kumar D¹, K. Pk², V. Arun³, D. Yadav¹, A. Gopi¹, S. M¹

¹Community Medicine Department, JSS Academy Of Higher Education and Research, Mysore, India; ²Medical Oncology, JSS Academy Of Higher Education and Research, Mysore, India; ³Information Science and Engineering, JSS Science and Technology University, Mysuru, India

Background: Digital platforms for patient-reported outcomes (PROs) may enhance cancer symptom management, yet evidence comparing digital vs traditional PRO monitoring remains limited. We evaluated the effectiveness of the Onco Care mobile application in PRO detection, ADR management, and quality of life outcomes among cancer patients receiving chemotherapy.

Methods: A randomized controlled trial (January-July 2024) enrolled 348 patients (1:1) on the Onco Care app (n=174) or standard care (n=174). The intervention group used the app for Reminders for chemotherapy and medications, PRO reporting and ADR reporting and management following CTCAE criteria, daily dietary details, and patient support groups. At the same time, controls followed standard reporting procedures. The study outcomes are PRO rates and time to symptom reporting, ADR management satisfaction (5-point scale) and QOL (EORTC QLQ-C30). Assessments occurred at baseline & 6 months.

Results: 342 patients completed the study (168 intervention, 174 control). App users showed higher PRO reporting rates (85% vs 50%, p<0.001). Intervention group commonly reported pain (78%), fever (72%), nausea/vomiting (65%), followed by constipation and other symptoms (\leq 42%). Control group reported primarily during chemotherapy: nausea/vomiting (45%), pain (40%), fever (38%). ADR management satisfaction was higher in intervention group (4.2/5 vs 3.1/5, p<0.001). At 6 months, intervention group showed improvements in physical (59.76 vs 54.37, p=0.001), role (61.71 vs 53.43, p<0.001), emotional (61.71 vs 53.44, p<0.001), and cognitive functioning.

Table: 422P			
Domain	App users (n=168)	Standard care (n = 174)	p-value
Physical functioning	59.76±12.51	54.37±15.65	0.001
Role functioning	61.71 ± 16.67	53.43 ± 19.26	< 0.001
Emotional functioning	61.71 ± 16.67	53.44 ± 19.25	< 0.001
Cognitive functioning	62.25 ± 15.47	55.08 ± 16.39	< 0.001

Conclusions: Digital PRO monitoring through Onco Care app significantly improved symptom reporting rates and captured broader chemotherapy-related adverse events. The intervention group showed marked improvements in multiple quality-of-life domains. These findings support integrating digital platforms for systematic PRO monitoring in cancer care.

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Role of individualized intervention(s) on quality of life (QOL) and adherence to adjuvant endocrine therapy in premenopausal women with early-stage breast cancer (EBC): MyChoice, a prospective multicenter trial

S. Mannala¹, W. Mahmood¹, P. Mondal¹, H.I. Chalchal², A. Sami³, L. Dwernychuk⁴, D. Gowan-Moody¹, N. Iqbal³, M. Salim², O. Ahmed³, M. Manna⁵, M.I. Khan², A. Leis¹, A. Chandrasekhar⁶, A. Bashir², K. Haider³, S. Kontulainen⁷, S. Ahmed⁸

¹College of Medicine, USask - University of Saskatchewan, Saskatoon, Canada; ²Oncology Department, Allan Blair Cancer Centre, Regina, Canada; ³Oncology, Saskatoon Cancer Centre University of Saskatchewan, Saskatoon, Canada; ⁴Clinical Trial Unit, Saskatchewan Cancer Agency, Saskatoon, Canada; ⁵Oncology, Saskatoon Cancer Centre, Saskatoon, Canada; ⁶Clinical Research, Saskatchewan Cancer Agency, Saskatoon, Canada; ⁷Kinesiology, University of Saskatchewan - College of Medicine, Saskatoon, Canada; ⁸Department of Oncology, University of Saskatchewan, Saskatchewan Cancer Agency, Saskatoon, Canada

Background: Combination endocrine therapy (CET) with tamoxifen or an aromatase inhibitor (AI) plus ovarian suppression (OS) in premenopausal women with high-risk EBC has been associated with improved outcomes but with diminish QOL and treatment adherence. We evaluated impact of individualized behavioral and complementary interventions on improving QOL, cognitive function, and adherence to adjuvant CET in premenopausal women with EBC.

Methods: MyChoice is a prospective multicenter study in which tailored interventions including exercise programs, yoga, acupuncture, and massage therapy were offered and customized based on patient preferences. The QOL and cognitive function were assessed every 6 months up to 3 yrs using FACT-B, FACT-ES, and FACT-Cognitive function scales. The primary outcomes focused on changes in QOL and cognitive function. Secondary outcomes assessed treatment adherence rates and factors affecting QOL and adherence. A linear mixed-effects model was used for analysis.

Results: 40 pre-menopausal women were enrolled. Median age was 43 yrs (26–55), 72% were white, 65% had \geq T2 tumors, 72% had N+ disease, and 18% had HER2+ disease. 75% received (neo)adjuvant chemotherapy and 90% received adjuvant radiation. 95% received an adjuvant AI and 5% received tamoxifen with OS. 90% initially received an LHRH agonist and 10% underwent upfront oophorectomy. Overall, 92.5% of patients remained adherent to adjuvant CET. During the study period total functional and physical well-being significantly improved by 1.52 \pm 0.38, p=0.0003, and -0.93 \pm 0.38 p=0.02 per year, respectively. Meanwhile total FACT-ES (-0.20 \pm 0.54 p=0.71), social/family well-being (0.13 \pm 0.39 p=0.74), emotional well-being (-0.26 \pm 0.18 p=0.14), and perceived cognitive abilities (0.11 \pm 0.65 p=0.86) remained stable. On multivariate analysis age >35 significantly correlated with better physical well-being while better cognitive score was noted in women >35 yrs, non-white, and with children.

Conclusions: Tailored complementary interventions helps maintaining QOL and cognitive function while supports high adherence to CET in premenopausal women with EBC.

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Socioeconomic disparities and osteoarthritis impact hormone therapy adherence in breast cancer

B-S. Jang¹, J.H. Chang¹, K.H. Shin²

¹Radiation Oncology, SNUH - Seoul National University Hospital, Seoul, Republic of Korea; ²Radiation Oncology, Seoul National University - College of Medicine - Yeongeon Medical Campus, Seoul, Republic of Korea

Background: Adherence to adjuvant hormone therapy (AHT) is critical for improving survival in breast cancer patients. This study examines how socioeconomic disparities, osteoarthritis (OA), and OA symptom onset timing influence AHT adherence and survival outcomes.

Methods: This retrospective cohort study included 33,142 women with invasive breast cancer (2011–2015) from the Korean National Health Insurance Service. Group-based trajectory modeling (GBTM) identified AHT adherence patterns based on the proportion of days covered (PDC) over five years. Competing risk regression and Cox models assessed the impact of socioeconomic factors, pre-treatment OA, NSAID use, and other variables on AHT discontinuation and survival.

Results: GBTM revealed two adherence patterns: high adherence (83.4%) and low adherence (16.6%), with the latter showing a rapid decline in PDC. The low adherence group had a significantly higher risk of treatment discontinuation (SHR: 14.06; 95% CI: 12.50—14.96; p < 0.001) and mortality (HR: 3.56; 95% CI: 3.09—4.09; p < 0.001) were longer OA history before AHT (p = 0.001) and pre-AHT NSAID use (p < 0.001) were linked to higher discontinuation risk, while delayed NSAID use after AHT initiation lowered the risk (p < 0.001). Patients with Medical Aid/Veteran insurance (OR: 0.60;