patients; however, the level of glucose uptake in breast ca is highly variable and limits the diagnostic usefulness of PET. Brown et al demonstrated that glucose uptake in breast cancer is primarily depending on Glut-1 (SLC2A1) expression. Paralelly, it has been demonstrated that a subgroup of breast cancers may be imaged by iodine or technetium-based scintigraphy, due to the expression of sodium-iodide symporter gene (SLC5A5), gene normally expressed in thyroid. The new positron tracer, 124-iodine, might increase the importance of these laboratory findings in breast cancer management. The aim of this study was to analyze the expression of SLC2A1, SLC5A5, other thyroid-specific iodine transporters (SLC5A8, SLC26A4) in the context of markers of breast cancer subtypes (ESR1, ERBB2, GATA3, VIM) and thyroid-specific genes (TPO, TSHR, TG).
Material and Methods: Breast cancer samples were collected from 157 patients, operated in MSC Memorial Cancer Center, Gliwice, Poland, in 38 patients with corresponding normal breast tissue. All samples were collected upon approval by local Ethics Committee. RNA was isolated by Chomczynski-Sacchi method, quality was assessed by Agilent 2100 Bioanalyzer. Real-time quantitative PCR (Q-PCR) analysis was performed on Applied Biosystems SDS 7700 machine with Universal Probe Library fluorescent probes (Roche). We analyzed 6 reference genes: ACTB, ATP6V1E1, B2M, EIF5, HADHA, UBE2D2, data were normalized by geNorm software.
Results: We compared gene expression of all markers according to estrogen receptor and HER2 status, we did not find any statistically significant differences. We noted a significant decrease of glucose transporter in patients operated after neoadjuvant chemotherapy ($p < 0.05$); the reduction of iodide transporter expression was much less pronounced. Similarly, SLC2A1 gene correlated with tumor grade; no such relationship was noted for SLC5A5. The groups of patients with high expression of glucose or iodide transporter (over 75th percentile) did not show any major overlap; thus it seems that these genes are up-regulated in distinct tumor subtypes.
Conclusions: Expression of glucose transporter SLC2A1 and iodine transporter SLC5A5 in breast cancer are independent, thus, the combined use of both markers in positron-emission tomography shall be considered and further studied.

Symptom science

Poster discussion presentations
(Wed, 23 Sep, 11:15−12:15)
Symptom science

3000 POSTER DISCUSSION

HFS 14: a specific quality of life scale for patients with hand-foot syndrome

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Background: Hand-foot syndrome or Hand-Foot skin reaction is a common adverse effect of certain chemotherapy agents, such as capecitabine or pegylated doxorubicin, where it is estimated to occur in 50% of cases. It is also frequently reported with some new targeted anticancer therapies, such as sorafenib or sunitinib, although its clinical presentation is slightly different [1]. There is currently no validated consensus on how to treat this condition, besides dose reductions [2]. It can have a major functional impact [3], sometimes preventing all professional activity and may even require discontinuation of the chemotherapy. However, there is no specific, validated clinical instrument to measure its intensity and its impact on patients, apart from NCI-CTC grading which is relatively insensitive and is not specific. The aim of this study is to develop and validate a hand-foot syndrome-specific quality of life scale in order to be able to measure the impact of the condition on patients and secondly to be able to assess the value of certain specific treatments in this indication.
Method: The questionnaire was developed after conducting a series of structured interviews with patients with forms of hand-foot syndrome of varying severity, which yielded a detailed and rigorous collection of verbatim transcripts. The Pilot-Testing are realised.
Results: Thirty-one items were identified, and 14 items were selected as being relevant and non-overlapping after initial evaluation. The first question in the HFS14 addresses which member is affected (hand, foot or both). The second question addresses the pain with three possible responses (very, moderately or not painful). The 14 items can be organised in 2 modules: the first module more specifically assesses the handicap generated by involvement of the “feet” and the second assesses the handicap generated by involvement of the “hands”. Six (6) items are considered common to both modules, 4 are hand-specific and 4 are foot-specific. The validation confirmed the internal consistency and very high reproducibility of the questionnaire.
Conclusion: The hand-foot syndrome-specific HFS14 scale is easy to use and meets the requirements of a quality of life scale. This scale now needs to be tested in longitudinal studies (for example in clinical trials) to confirm its ability to measure a change in status.

References

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3001 POSTER DISCUSSION

Factor analysis of the Health-Related Quality of Life indicators of the QLQ-C30 in 6798 cancer patients

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Background: When treating cancer patients, preservation of quality of life is an important goal. There is an emerging consensus that quality of life should be one of the endpoints in clinical trials. The specific aim of this study was to explore the underlying factor structure of the 15 Health-Related Quality of Life (HRQoL) indicators and to generate hypotheses about the inter-relationships of the indicators.
Material and Methods: Pooled data from 6798 patients on 29 European Organisation for Research and Treatment of Cancer (EORTC) randomized clinical trials were used for this analysis. Principal Factor Analysis was performed to extract factors from the 15 HRQoL indicators. An oblique rotational technique (Harris-Kaiser) was used. Cronbach’s alpha coefficient (α) was calculated to measure internal consistency. Validity of results was evaluated by using clinical parameters World Health Organisation (WHO) performance status (0−1 vs 2−3) and metastases status (no vs yes) to divide the patients into subgroups that were expected to differ in HRQoL. Subgroups were compared using the t-test, with response variables being the obtained factors.
Results: Two main factors emerged from the analysis. The first factor had high loadings from 8 of the 15 indicators: physical functioning, role functioning, emotional functioning, cognitive functioning, social functioning, global health status, fatigue and pain. This factor appears to describe a ‘general functioning’ status. The second factor had high loadings from 2 of the 15 indicators: nausea and vomiting and appetite loss. This factor appears to describe a ‘gastrointestinal functioning’ status. Internal consistency was $\alpha = 0.87$ for the ‘general functioning’ factor and $\alpha = 0.68$ for the ‘gastrointestinal functioning’ factor. Both factors were able to detect differences in subgroups defined according to WHO performance status ($p = 0.0008$ for the ‘general functioning’ factor, $p < 0.0001$ for the ‘gastrointestinal functioning’ factor) and to metastases status ($p < 0.0001$ for the ‘general functioning’ factor, $p < 0.0001$ for the ‘gastrointestinal functioning’ factor).
Conclusions: Factor scores are useful to monitor quality of life in patients. Patient assessed HRQoL indicators have demonstrated prognostic power; summary indexes of HRQoL indicators should be employed as stratification variables alongside conventional variables. This approach may also allow simplification of data and analysis in clinical trials.