we have examined the association between functional impairments of cancer patients and circulating cytokines using a multiplex technique.
Methods: 50 patients with solid malignancies were registered in the study. Physical and psychological functions were assessed using the QOL questionnaire (QLQ-C30, version 3.0) of the EORTC. Plasma cytokine levels(IL-1beta, IL-1RA, IL-2, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-12(p70), IL-13, IL-15, IL-17, basic FGF, eotaxin, G-CSF, GM-CSF, IFN-gamma, IP-10, MCP-1, MIP-1alpha, MIP-1beta, PDGF-BB, RANTES, TNF-alpha, VEGF) were measured in all patients and assessed the relation to functional scale scores. The institutional Ethical Committee approved the study, and each patient gave written informed consent.
Results: Univariate analysis showed circulating levels of IL-6 and VEGF to have a significant negative correlation with physical functioning scales. Levels of IL-6, G-CSF and VEGF were negatively correlated with cognitive and emotional functioning scales in univariate analysis. Multivariate analysis showed that circulating IL-6 level is a significant independent determinant of physical and cognitive functioning and that circulating VEGF level is a significant independent determinant of emotional functioning in patients with cancer.
Conclusion: We have revealed the relationship between multiple circulating cytokines and functional impairment in patients with cancer, and demonstrated that levels of circulating IL-6 and VEGF can be biologic markers of cancer-related functional impairment. IL-6 and VEGF might play pivotal roles in the pathophysiology of cancer symptoms and functional impairments. These cytokines are highly promising candidates for therapeutic interventions to improve functions of patients with advanced cancer.

3040 POSTER

Culture-related Issues in the Translation of Quality of Life Questionnaires for Use in International Cancer Clinical Trials: Example of Classification and Solutions for EORTC Measures

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Background: The questionnaires developed by the European Organisation for Research and Treatment of Cancer (EORTC) Quality of Life Group are widely used to measure quality of life in cancer patients. The expanding geographical coverage of clinical trials implies a continuous need for new translations of these measures. Besides normal linguistic problems, cultural issues arise, especially outside Europe, and have to be addressed to ensure the equivalence and validity of final questionnaires. We examined these issues in this study.
Material and Methods: The EORTC Translation Unit (TU) analyzed the total of 103 translations finalized in 2010, aiming to classify problematic cultural issues and determine solutions. Theoretical background was provided by a literature search (2002–2011) in Translation Studies publications on culture-related problems.
Results: Our analysis showed two main types of culture-bound issues: (1) specific issues related to culturally-dependent activities or phenomena (e.g. driving a car in Western Europe as opposed to Asia); (2) topical issues related to taboos (e.g. sex or death).
The former are addressed using the foreignization theory, retaining cultural concepts unknown to the target culture. Comprehensibility is checked by pilot-testing the translation on patients and, if necessary, adjustments are made and re-checked. For example, the concept of “a heavy suitcase” is retained in translations into Chinese and not replaced with “a bag of rice” and its comprehensibility is tested in patient interviews.
The latter usually involve whole scales (e.g. sexuality or future perspective) and raise suggestions of deleting the entire scale. Yet, the problematic scales are always retained and patients are invited to reword them during the pilot-testing. Their suggestions are then analyzed and used for rephrasing when possible. For example, in the last 15 multiple myeloma module translations, 20 translated items proved problematic. After analysis, we rephrased 6 items and retained the wording in 14, since either the suggestions had to be refused or no options were provided.
Conclusions: Every day the TU encounters culture-related problems in translation, which, if not addressed, could hinder the assessment of QOL results in clinical trials. No ideal solution to translation challenges exists, since they always impact the final translation and its interpretations, but the TU has developed a method based on foreignization supported by pilot-testing to ensure comprehensibility and, if necessary, analyzing possible rephrasing options suggested by patients. Daily practice and validation studies have confirmed that the quality and validity of translated questionnaires are ensured.

3041 POSTER

Oxaliplatin-induced Neurotoxicity − Comparing Four Methods of Assessment

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Background: Dose-limiting neurotoxicity is a major side-effect of adjuvant oxaliplatin treatment, producing initial acute neurotoxicity and chronic neuropathy with increasing exposure [1]. Despite the potential of increased life expectancy, these symptoms may have a profound effect on the quality of life of survivors. This, coupled with findings from clinical studies (i.e. exploring causative mechanisms, the efficacy of neuroprotective agents or decisions about dose reduction) highlights the limitations of currently available symptom assessment tools. To explore these discrepancies four methods of symptom assessment were compared.
Methods: Consecutive symptomatic patients reporting peripheral neuropathy after oxaliplatin chemotherapy for colon cancer were interviewed using a semi-structured clinical interview. Subjects’ verbatim responses were analysed by qualitative methods. Neurotoxicity was also assessed by the National Cancer Institute Common Toxicity Criteria (NCI-CTC) neuropathy sensory subscale (clinician-rated); by patient ‘self-report’ questionnaires (SRQ) and objectively by nerve conduction tests [2].
Results: Twenty patients participated (65% female; mean age 58). Mean cumulative oxaliplatin dose was 789 mg/m^2. In 40% of patients early cessation of treatment was necessitated by neurotoxicity. Mean time since treatment cessation was 39 weeks. Only 2 patients were designated by clinicians with maximum NCI grade 3 (sensory alteration or paresthesia interfering with activities of daily living), the remainder were classified as grade 1 or 2. All patients interviewed described physical limitations due to symptoms and SRQ data supported this (75% reported ‘moderate symptoms’).
Conclusions: Given the discrepancies in symptom prevalence highlighted by findings in this study, the identification and monitoring of oxaliplatin-induced neurotoxicity would benefit from more appropriate and informative clinical assessment. This would be beneficial not only in clinical trials to monitor the efficacy of interventions and research exploring aetiopathology but also in prospective studies of survivors. A method of assessing symptom severity and frequency together with disability, and which provides a cumulative score is proposed.

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3042 POSTER

Does Response Shift Affect the Change in Health Related Quality of Life During Treatment for Childhood Cancer?

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Background: Confrontation with a serious illness changes the person’s internal standards about good or poor Health Related Quality of Life (HRQL) as a result of adaptation to the imperfect health status. This change in internal standards, called response shift, might influence the measures of change in HRQL in longitudinal studies. This study assessed whether response shift affected the change in HRQL during the first three months of treatment for childhood cancer.
Materials and Methods: HRQL was assessed within two weeks after diagnosis (pre-test) and three months later (post-test) using both child- and parent-report of PedsQL and Cantril’s ladder. Health status was assessed with MSAS and Lansky Performance scale. Concurrently with the post-test, a then-test of PedsQL and Cantril’s ladder was administered where child and parent had to give a renewed judgement about the HRQL shortly after diagnosis. A difference between pre- and then-test indicates the presence of response shift. Included were children $\geqslant$8 years (n = 37), their parents, and parents of children $\geqslant$2 years (total number of parents: n = 80). Wilcoxon Signed Rank-Tests were used to compare pre- post- and then-tests.