Research Paper
Head and Neck Oncology

Changes in health-related quality of life of oral cancer patients treated with curative intent: experience of a developing country

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Abstract. This study aimed to assess changes in oral cancer patients' health-related quality of life (HRQOL) and the impact of disease stage on HRQOL scores. HRQOL data were collected from seven hospital-based centres using the Functional Assessment of Cancer Therapy–Head and Neck (FACT-H&N) version 4.0 instrument. The independent samples t-test, χ^2 test, and paired samples t-test were used to analyse the data. A total of 300 patients were recruited. The most common oral cancer sub-site was tongue and floor of mouth (42.6%). Surgical intervention (41.1%) was the most common treatment modality. Significant differences in ethnicity and treatment modality were observed between early and late stage patients. Pre-treatment HRQOL scores were significantly lower for late than early stage patients. At 1 month post-treatment, the functional and head and neck domains and the FACT-H&N (TOI) summary scores showed significant deterioration in both early and late stage patients. In contrast, the emotional domain showed a significant improvement for early and late stage patients at 1, 3, and 6 months post-treatment. Although HRQOL deterioration was still observed among early and late stage patients at 6 months post-treatment, this was not statistically significant. In conclusion, advanced disease is associated with poorer HRQOL. Although ethnic differences were observed across different disease stages, the influence of ethnicity on patient HRQOL was not evident in this study.

Oral cancers, which are primarily squamous cell carcinomas, are a major public health problem worldwide. Globally oral cancer is the sixth most common cancer[1], with an estimated incidence of 400,000–700,000 new cases per year. In the South-East Asian Region, estimates for the year 2008 ranked oral cancer second for men and sixth for women among all cancers, with an age-standardized incidence rate (ASR) of 6.7 per 100,000 population and age-adjusted death rate of 4.5 per 100 000 population, as compared to 3.9 and 1.9 per 100,000 population, respectively, worldwide[2]. In Malaysia, oral cavity cancer is among the top 20 most common types of cancer, with one new case being diagnosed daily according to the National Cancer Registry[3]. The higher oral cancer burden in the South-East Asian Region is mainly due to the practices of tobacco use and habitual betel quid chewing.

Factors that exert a major influence on cancer survival are a delay in diagnosis and less effective treatment at advanced stages of cancer[4]. This is not unexpected, as oral cancer is often associated with late presentation; more than two-thirds of cases present at advanced stages[5], which inevitably contributes to poor survival. However, the overall survival of cancer patients has improved over the years as a result of advancements in prevention, diagnosis, and treatment[6]. In the USA, more than half of all cancer patients who receive treatment, including those with head and neck cancer, are expected to become long-term survivors[7].

Oral cancer patients surviving over the long term often carry a profound physical burden in aspects of communication, ability to swallow, and facial disfigurement[8,9]. There may also be psychosocial sequelae that can adversely affect the patient's quality of life[10]. In comparison to cancer patients in general, head and neck cancer patients are amongst the most distressed[11], mainly due to problems related to speech and swallowing[12].

Hence, in addition to placing emphasis on standard disease outcome parameters such as tumour control, overall survival, and complications, health-related quality of life (HRQOL) data have become an important source of information concerning the impact of the disease and treatment outcomes for head and neck cancer patients[13]. The routine use of HRQOL questionnaires among cancer patients enables health practitioners to identify the aspects of their patients' lives affected by treatment and its consequences, as well as the extent of these effects. Such information will allow better decision-making by health practitioners regarding treatment options that are best tailored to patient needs.

A systematic review to determine the association between HRQOL and survival in patients with head and neck cancer found a positive association between physical functioning and survival, as well as between the change in global HRQOL from pre-treatment to 6 months after treatment and survival[14].

One of the main influences on HRQOL for oral cancer patients is the disease stage at presentation. Patients presenting at late stages have been shown to have poorer HRQOL and a worse prognosis as compared to patients presenting early[15]. Although there is evidence linking disease staging with HRQOL, no such data are available for the Malaysian population and in particular for oral cancer patients. Also, there have been no longitudinal studies so far on the HRQOL of head and neck cancer patients in Malaysia. Thus, the aim of this study was to assess changes in HRQOL of Malaysian oral cancer patients from the point of diagnosis (pre-treatment) through the 1-, 3-, and 6-month follow-ups. Differences in characteristics between patients presenting early and late were also explored, and the impact of disease stage on HRQOL scores was assessed.

Materials and methods

Study design

This was a longitudinal study on Malaysian oral cancer patients receiving treatment at seven selected hospital-based centres nationwide. These centres were chosen as they were the main referral centres for the management of oral cancer patients. Inclusion criteria encompassed Malaysian patients aged 18 years and older, who were diagnosed histologically with oral squamous cell carcinoma. Patients who were mentally compromised or terminally ill (based on medical records) were excluded from the study. Patient consent was obtained prior to data collection.

Data collection

Data were collected by research coordinators who were trained on the research instrument prior to data collection. Clinical details such as tumour site, disease staging, and treatment type were obtained from the medical records. The patients' socio-demographic details and HRQOL data were collected via face-to-face interview with the patients. Proxy assessment via interviews with patient carers was considered in instances where the patient was very frail after surgery or in the presence of language barriers.

Data on oral health-related quality of life were collected using the Functional Assessment of Cancer Therapy–Head and Neck (FACT-H&N) version 4.0 instrument. This instrument has already been translated into Malay, the national language, and cross-culturally adapted and validated for a Malaysian population[16]. The FACT-H&N used in this study comprises 47 items, which are grouped into six sub-scales, namely the physical (GP), social (GS), emotional (GE), functional (GF), and head and neck (H&N) sub-scales, with a supplementary set of Malaysian added questions (MAQ). The MAQ comprises a set of questions that were found to be important for the assessment of HRQOL in Malaysian patients in an earlier study and has been validated previously[16].

FACT derivative summary scales were also analysed. These included (1) FACT-G: FACT General (comprising four subscales GP, GS, GE, GF); (2) FACT-H&N: FACT Head and Neck (comprising five subscales GP, GS, GE, GF, H&N); (3) FACT-H&N (TOI): FACT Head and Neck–Trial Outcome Index (comprising three subscales GP, GF, H&N); (4) FACT-H&N-MAQ: FACT Head and Neck–Malaysian Added Questions (comprising six subscales GP, GS, GE, GF, H&N, MAQ; (5) FHNSI: FACT Head and Neck–Symptom Index (comprising four subscales GP, GE, GF, H&N); and (6) FHNSIMAQ: FACT Head and Neck–Symptom Index and Malaysian Added Questions (comprising five subscales GP, GE, GF, H&N, MAQ). Summary mean scores were calculated and missing data were managed based on the FACT scoring manual[17]. Higher HRQOL scores indicate better HRQOL.

Statistical analysis

Descriptive statistics were recorded using the frequency distribution and mean scores with standard deviation. Disease stage was categorized as early (stage I and II) or late (stage III and IV). The association between demographic and clinical characteristics and disease stage at presentation was assessed by χ^2 test, while the independent samples t-test was used to explore differences in HRQOL mean scores by disease stage. Differences in characteristics of attrition were