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Does a multidisciplinary team approach in a tertiary referral centre impact on the initial management of head and neck cancer?

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SUMMARY

Objectives: A multi-disciplinary team (MDT) is essential in the management of cancer. Head and neck cancer (HNC) is a rare, complex and heterogeneous group of malignancies for which different treatment options are available. However, the potential impact of MDT on the management of HNC has been only poorly evaluated to date. This study evaluates the impact of MDT on the management of HNC in a tertiary centre.

Methods: We retrospectively analysed records of HNC patients referred to a MDT evaluation at the Istituto Nazionale Tumori of Milan, Italy, from May 2007 to January 2012. All cases were reviewed by a MDT consisting of a head and neck surgeon, a radiation oncologist, and a medical oncologist.

Results: Data from 781 HNC patients were analysed. Approximately 70% of patients were referred to our Institution for a second opinion consultation. Following MDT evaluation, new staging examinations were requested in 49% of patients, and treatment plan was modified in 10%.

Conclusions: A MDT approach in a tertiary referral hospital leads to staging refinement of disease or changes in treatment plan in about 60% of patients.

Introduction

Head and neck cancer (HNC) ranks fifth among the most common neoplasms, with >500.000 new cases diagnosed every year [1]. HNC comprises a group of malignant tumours located in the upper aero-digestive tract which show similar biological behaviour. The classification of HNC can be based on the anatomic sites of origin (i.e. nasopharynx, nasal cavity, paranasal sinuses, oropharynx, oral cavity, larynx, hypopharynx, salivary glands, thyroid glands) as well as on the histological type, with squamous cell carcinoma being the most frequent type of disease. Such anatomical and histological variability greatly affects all the steps of care, from the initial staging to diagnosis and prognosis, with a plethora of potential therapeutic options to select from.

Given the heterogeneity of disease, treatment of patients with advanced HNC remains a clinical challenge. Although several efforts have been made to improve outcomes, the prognosis remains poor, with a 5-year overall survival rate of 30–35% [2]. Some strategies, such as the addition of cisplatin to conventionally-fractionated radiotherapy (RT) [2–8], the modification of RT treatment schedules [7,9–11] or the use of targeted agents such as cetuximab in combination with RT [12] have led to improved loco-regional control and, in some cases, to longer survival.

Given the considerable variability in both tumour and patient characteristics, it has become more and more evident that a single physician cannot manage all aspects of HNC management. In fact, different specialists with different expertise are required to correctly approach every phase of HNC care, from the first visit and diagnosis to the identification of the most appropriate therapy, the management of adverse effects and the follow-up procedures [13]. The different steps of management must be discussed among the involved healthcare providers, according to patient's needs.

On this basis, the multidisciplinary team (MDT) approach is currently emerging as the best approach to cancer care because it allows a comprehensive evaluation of cancer patients from different points of view [14]. The MDT is an equal-level structure which

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includes clinicians with different roles, specialisations and expertise, and it allows create a network with the patient at the centre of the decision process [13,15]. The final aim of this path is to make a correct diagnosis and provide patients with the best possible treatment [16–18].

In the last decade, the MDT has become more and more an integral part of the clinical management of cancer patients in many European countries, and it currently represents one of the criteria considered by the Organisation of European Cancer Institutes (OECI) in the accreditation process of a cancer centre. Several reports on the effectiveness of this strategy in different types of cancer are available. Forrest et al. [19] showed that the introduction of a MDT is associated with a change in the treatment of inoperable non-small cell lung carcinoma that leads to prolonged survival. In another study, the initial treatment recommendation for women with breast cancer changed in 43% of cases following a second-opinion evaluation by a MDT [20]. Stephens et al. found that patients managed by a MDT show better outcomes after surgery for oesophageal cancer, as compared with historical controls managed by general surgeons [21]. A very recent meta-analysis indicates that treatment of many types of cancer has been improved by the MDT approach [22].

The importance of MDT in the management of HNC has been recently suggested [23–25]. However, information on the potential impact of an MDT approach in this setting remains scant.

We have adopted at the Istituto Nazionale Tumori (Milan, Italy), a MDT approach for the first HNC outpatient visits since May 2007. In the present analysis, we assess the impact of a multidisciplinary approach on the management of patients with HNC.

Patients and methods

We retrospectively analysed records of HNC patients referred to an outpatient visit at our institute, from May 2007 to January 2012. Specific information was collected on patient's and disease characteristics, including demographic data, tumour site, histological type, disease extension and radiological stage, and previous treatments. All data were recorded in a centralised database, updated to the last day of patients' life or last visit at our Institution.

All cases were evaluated by a MDT consisting of a head and neck otolaryngologist or a maxillofacial surgeon, a radiation oncologist and a medical oncologist. Only full-staff physicians trained in HNC were involved in multidisciplinary outpatients visits. The enlarged MDT can also include other healthcare providers who are sometimes involved in the decision process, i.e. a radiologist, a pathologist, a rehabilitation therapist, a dietician, a pain specialist, a psychologist and a specialised nurse.

The MDT met regularly biweekly: these meetings focused on clinical and radiological evaluations as well as on the formulation of treatment plans. Since we are a tertiary referral centre, requests for second opinions are very common.

The present report is focused on treatment plan changes after MDT with respect to prior indications formulated by other Centres/specialists. We considered all patients and then separately those with oropharyngeal, oral, laryngeal, hypopharyngeal, or differentiated thyroid cancer (hence, common tumors) and those with rarer diseases (nasopharynx, paranasal, cutaneous, salivary, unknown primary and other cancers).

All data were analysed by descriptive statistics.

Results

Data from 781 HNC patients referred for a first MDT visit were included.

Patients' characteristics are shown in Table 1. In line with the European trends [25], the majority of patients (68%) were male and the most frequent histological type was squamous cell carcinoma (65%), with the most common sites being oropharynx (21%), followed by oral cavity (20%) and larynx (14%).

About 70% of patients were referred to our Institution for a second opinion, either by another specialist (generally an otolaryngologist or maxillofacial surgeon) or on a self-referral basis. Patients coming to our attention for a second opinion consultation had already been prescribed a treatment in 44% of cases.

MDT decisions are summarized in Table 2. Staging or restaging by imaging, pathology or immunoistochemical/molecular analyses was deemed necessary to select the most appropriate therapeutic protocol in 49% of cases. Immediately following the MDT evaluation, diagnosis was changed without any further need for additional diagnostic investigations at a molecular level in 3% of cases. The recommended management was modified directly at the first visit in 10% of patients, with negligible differences between patients with common forms of HNC and those affected from rarer types of disease.

Staging or restaging was recommended in a higher proportion of patients in the rare cancer group as compared with the common cancer group (60% vs 43%). Immediately following the MDT evaluation, staging was changed in 1% and 4% of patients in the common

Table 1
Patient characteristics.

Variable	All patients (n = 781) n (%)	Common (n = 495) n (%)	Rare (n = 286) n (%)
Age	62 (17–95)	63 (22–95)	61 (17–93)
Gender			
Male	531 (68)	344 (70)	187 (65)
Female	250 (32)	151 (30)	99 (35)
Anatomic site			
Oropharynx	163 (21)	163 (33)	0 (0)
Oral cavity	159 (20)	159 (32)	0 (0)
Larynx	110 (14)	109 (22)	1 (0.3)
Hypopharynx	29 (4)	29 (6)	0 (0)
Thyroid gland DTC[a]	20 (2)	20 (4)	0 (0)
Thyroid gland other/ or M1	14 (18)	0 (0)	14 (5)
Rare			
Nasopharynx	80 (10)	0 (0)	80 (31)
Paranasal sinuses	67 (9)	0 (0)	67 (26)
Skin	44 (6)	0 (0)	44 (8)
Salivary gland	34 (4)	0 (0)	34 (12)
Unknown	19 (2)	0 (0)	19 (8)
Other	43 (5)	0 (0)	43 (13)
Histology at MDT presentation			
Squamous cell carcinoma	508 (65)	410 (85)	98 (34)
Undifferentiated	85 (11)	10 (2)	75 (26)
Salivary carcinoma	53 (7)	15 (3)	38 (13)
Not done	41 (5)	21 (4)	20 (8)
Benign	25 (3)	13 (3)	12 (5)
Papillary sensible RAI	16 (2)	16 (2)	0 (0)
Adenocarcinoma	11 (1)	1 (0.2)	10 (4)
Other	44 (6)	26 (5)	24 (8)
First evaluation	232 (30)	149 (30)	83 (29)
No pre-treatment	158 (20)	109 (22)	49 (17)
Pre - treatment	74 (9)	40 (8)	34 (12)
Second opinion consultation	549 (70)	346 (70)	203 (80)
No pre-treatment	203 (26)	136 (27)	67 (23)
Pre-treatment	346 (44)	210 (42)	136 (55)
Metastatic disease	59 (7)	28 (5)	31 (12)
Recurrent disease	198 (25)	144 (27)	54 (22)

[a] DTC: Differentiated Thyroid Cancer.