The role of palliative care in relapsed and metastatic head and neck cancer patients in a single ESMO integrated oncology and palliative care centre

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Received: 15 April 2022 / Accepted: 29 June 2022 / Published online: 12 July 2022
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Abstract

Background Palliative care (PC) for patients with advanced cancer improves symptom management and quality of life and may promote home deaths. Limited data are available regarding PC in advanced head and neck cancer (HNC) patients. The aim of this study was to describe the type of care and modalities of integration of specialized PC in a population of relapsed and/or metastatic head and neck cancer patients, followed in a single institution over 4 years.

Methods Between January 2016 and December 2019, data on patients with relapsed and/or metastatic head and neck cancer not suitable for curative treatment diagnosed at the Oncology Institute of Southern Switzerland were reviewed retrospectively. Site, type and lines of treatment, treatment response, referral to specialist palliative care (yes or no), type of symptoms, tracheostomy and/or feeding-tube presence, and site of death were documented. Comparisons were made between patients benefitting from PC integration vs standard care.

Results Eighty-six patients with relapsed/metastatic HNC were identified, 63 (73.3%) of whom were referred to specialized PC. Patients were mainly men (66, 76.7%), with a median age of 69 years (range 44–95). The most common site of tumour was the oropharynx (31, 36%), followed by the larynx (21, 24.4%), oral cavity (19, 22.1%), hypopharynx (14, 16.3%), and unknown primary (1, 1.2%). Forty-four patients (51.2%) were treated with systemic treatment. The median time interval between the diagnosis and palliative care referral was 1.7 months. At the time of our analysis, 69 patients had died (58 in the PC group and 11 in the non-PC group). Fifteen patients (25.9%) in the PC group and 4 (36.4%) in the non-PC group had received aggressive treatment (chemotherapy, tracheostomy and/or feeding tube) in the last month of life, with no significant difference between groups ($p = 0.44$). There was no difference in the incidence of home death (19.1% PC group vs 9.1% non-PC group, $p = 0.67$) or presence of caregiver (69.8% PC group vs 78.2% non-PC group, $p = 0.58$) between groups, while palliative care was associated with more opioid use (90.5% vs 17.4%, $p < 0.0001$). Patients in the PC group had a shorter survival compared to the non-PC group (5.7 vs 19.9 months, $p = 0.0063$).

Conclusions This study shows that patients appear to be at risk of receiving inappropriate invasive treatments close to death and of dying in hospital settings. Further research is needed to investigate how early PC may affect decision-making around treatments and improve HNC patients’ holistic wellbeing.

Keywords Head and neck cancer · Palliative care · Quality of life · Home deaths

Introduction

Patients diagnosed with head and neck cancer frequently suffer from symptoms of their disease, treatment morbidity, malnutrition, existing comorbidities and social issues. Therefore, this population of patients presents with a high level of complexity.

These patients have a short life expectancy, confirmed by data showing a 12-month survival rate with treatment, varying from 5.6 months with mono-chemotherapy, 7 months with poli-chemotherapy to 13 months with chemo-immuno-therapy for relapsed and/or metastatic head and neck cancer [1–3].
Palliative care (PC) aims to improve the quality of life of patients and families, and some studies have also demonstrated an impact on overall survival.

Family and caregivers also benefit from PC in terms of better communication, help in decision-making, and avoiding aggressive care near the end of life. Furthermore, PC may address issues of advanced care planning and preferred place of death, giving priority to the patient’s wishes [4–6].

The role of PC in advanced cancer is well established, whereas there is a paucity of studies in specific cancer populations, such as head and neck cancer patients. There are also controversial data over the correct timing and criteria for PC referral and general outcomes to monitor in head and neck patients [7, 8].

Therefore, the aim of this retrospective trial was to describe the role of PC in head and neck cancer patients followed in a single institution with an ESMO certification of integrated oncology and palliative care. Disease-modifying treatments such as chemotherapy and immunotherapy, symptoms, opioid use, use of tracheostomy, feeding tube or chemotherapy in the last month of life, and site of death were also analysed.

Patients and methods

We performed a retrospective study and database review of all patients at our centre between January 2016 and December 2019, with a diagnosis of relapsed and/or metastatic head and neck cancer. Date of advanced cancer diagnosis, treatment and responses, presence of feeding tube, presence of tracheostomy, type of symptoms, social context, treatments near the end of life (chemotherapy, tracheostomy, feeding tube), and site of death were documented.

Comparison between patients with and without palliative interventions was performed. Data are expressed as mean ± SD or median (min; max) values as appropriate and were analysed using repeated measures ANOVA and Kaplan–Meier estimates.

The ethics committee approved this retrospective study and waived the requirement of informed consent.

Results

Between January 2016 and December 2019, 153 patients with head and neck cancer were diagnosed and treated at the Oncology Institute of Southern Switzerland. Among them, 86 patients with relapsed/metastatic HNC were identified, 63 (73.3%) of whom were referred to specialized PC. The patients’ main characteristics are described in Table 1.

Patients were mainly men (66, 76.7%), with a median age of 69 years (range 44–95). The most common site of tumour was the oropharynx (31, 36%), followed by the larynx (21, 24.4%), oral cavity (19, 22.1%), hypopharynx (14, 16.3%), and unknown primary (1, 1.2%).

The median time interval between the diagnosis and palliative care referral was 1.7 months (range 0–48.8 months).

Systemic treatment was administered in 44 patients (51.2%): 79.8% received chemotherapy and 20.2% received immunotherapy, and 35.2% received a second-line treatment.

Of the 86 patients, 48.8% had a feeding tube (49.2% in PC group vs 47.8% in non-PC group, \( p = 1.0 \)), 52.9% had a tracheostomy (39.7% in PC group vs 21.7% in non-PC group, \( p = 0.13 \)).

Fifteen patients (25.9%) in the PC group and 4 (36.4%) in the non-PC group received systemic treatment and/or tracheostomy and/or feeding tube in the last month of life, with no significant difference between groups (\( p =0.44 \)).

Palliative care was associated with more opioid use (90.5% vs 17.4%, \( p < 0.0001 \)).

| Table 1 Patients’ characteristics | Total | With PC* | Without PC* |
|----------------------------------|-------|----------|-------------|
| No. patients                     | 86    | 63 (73.3%) | 23 (26.7%) |
| Median age                       | 69    | 67        | 71          |
| Median BMI                       | 20    | 20        | 21.8        |
| Tumour site                      |       |           |             |
| Oral cavity                      | 19 (22.1%) | 16      | 3           |
| Oropharynx                       | 31 (36%) | 20      | 11          |
| Hypopharynx                      | 14 (16.3%) | 12     | 2           |
| Larynx                           | 21 (24.4%) | 14     | 7           |
| Unknown                          | 1 (1.2%) | 1       | 0           |
| Systemic treatment               | 51 (59.3%) | 40 (63.5%) | 11 (47.8%) |
| ≥ 2 lines of systemic treatment  | 18    | 13        | 5           |

*p PC palliative care
At the time of our data analysis, 69/86 patients had died (58 in the PC group and 11 in the non-PC group).

There was no difference in the incidence of home deaths (19.1% PC group vs 9.1% non-PC group, \( p = 0.67 \)) or presence of caregiver (69.8% PC group vs 78.2% non-PC group, \( p = 0.58 \)) between groups.

Patients in the PC group had a shorter survival compared to the non-PC group (5.7 vs 19.9 months, \( p = 0.0063 \), Fig. 1).

Patients’ outcomes are described in Table 2.

**Discussion**

This is the first study that investigated palliative care interventions in advanced head and neck patients in an ESMO certified in integrated oncology and palliative care.

There was a non-statistically significant reduction in aggressive treatment in the last month of life in the PC group and the majority of feeding tubes and/or tracheostomies (86%) were placed before palliative care referral in this group. This is a clinically important result according to an interesting analysis of a self-administered survey in head and neck cancer patients that demonstrated that the presence of a feeding tube and/or tracheotomy and chemotherapy were significant clinical predictors of worse quality of life [9].

The ESMO clinical practice guideline about patient care at the end of life does not recommend the use of nutritional interventions in the last weeks of life, because they do not improve quality of life or survival [10]. Moreover, even if a feeding tube is a physically accepted technique, both patients and caregivers can experience significant psychosocial distress as a result [11, 12]. Despite this evidence, a systematic literature review reported that artificial nutrition is a frequent intervention in the last week of a cancer patient’s life, being recorded in up to 50% of patients [13]. This contradiction may be related to communication and cultural issues and overestimation of prognosis on the part of clinicians, and is particularly seen in head and neck patients, for which artificial nutrition is used more often than for other cancers [14].

PC advises oncologists, patients and their families not to use enteral nutrition in the last few weeks of life, as demonstrated by Wiegert et al. [15].

Many head and neck cancer patients treated with a curative intent require a tracheostomy, and therefore, guidelines for indication and management are available. On the contrary, data about the role of tracheostomy in the last month of life is lacking. There is evidence that tracheostomy has a profoundly negative impact on quality of life and requires specific training on its management [16]. On the other hand, acute dyspnoea could be an ethical challenge for both clinicians and caregiver, and therefore, advance care planning and end-of-life issues may be addressed by engaging PC early in the disease trajectory [17].

**Fig. 1** Overall survival

| Table 2 | Patients’ outcome |
|---------|-------------------|
|         | Total | With PC* | Without PC* | P value |
| Deceased patients | 69 | 58 | 11 | 0.0063 |
| Median OS** | 5.9 months | 5.7 months | 19.9 months | 1.0 |
| Feeding tube | 42 (48.8%) | 31 (49.2%) | 11 (47.8%) | 0.13 |
| Tracheostomy | 30 (34.9%) | 25 (39.7%) | 5 (21.7%) | 0.39 |
| Chemotherapy in the last month of life | 12 (17.4%) | 9 (15.5%) | 3 (27.2%) | 1.0 |
| Feeding tube in the last month of life | 5 (7.2%) | 4 (6.9%) | 1 (9.1%) | 0.41 |
| Tracheostomy in the last month of life | 3 (4.3%) | 2 (3.4%) | 1 (9.1%) | 0.44 |
| Aggressive treatment in the last month of life | 20 (29%) | 15 (25.9%) | 4 (36.4%) | 0.67 |
| Death at home | 11 (19.1%) | 1 (9.1%) | 18 (78.2%) | 0.58 |
| Caregiver | 44 (69.8%) | 18 (78.2%) | 4 (17.4%) | <0.0001 |

*PC palliative care, **OS overall survival
Choi et al. found that cancer care near the end of life became more aggressive when compared to the previous decade with respect to chemotherapy. They found that 42.7% of the study population received chemotherapy in the last month of life, whereas in our study only 12.8% received this treatment (12.7% in PC group vs 13% in non-PC group, \(p = 0.088\)). This aspect could be optimized with the early introduction of PC, leading to less aggressive end-of-life care including reduced chemotherapy [5]. The start and/or prosecution of aggressive care (in particular chemotherapy) close to death is widely deemed as nonbeneficial due to a limited effect on overall survival, symptom deterioration, and the high burden of toxicity, leading to impairments (or the absence of improvement) in quality of life. Earle et al. described how difficult it is to both achieve patient satisfaction and avoid futile care, giving the responsibility to the physician to counsel patients and their families when it is time to stop anticancer treatments and focus on an end-of-life approach [18].

Another innovative result of our study is that pain was the most common symptom in the evaluated population, at its peak affecting 95.3% of patients. This prevalence was higher than the 70% reported in a systematic review for head and neck cancer patients, but both figures show that pain is the most significant symptom for this type of cancer in all stages [19]. An interventional study, involving patients with chronic disease of whom 30% had cancer, showed that only 8% of patients received adequate pain treatment with opioids from the primary care provider. This is an important aspect, because uncertainties about treatment outcome are known barriers for integrating PC within routine oncological care [20, 21]. However, the correct use of opioids is mandatory for pain relief, especially for head and neck cancer patients who have a significantly greater odds of opioid prescription compared with use among patients with lung or colon cancer [22].

Our retrospective study did not demonstrate a statistically significant overall survival benefit of adding palliative interventions to oncological standard of care. In fact, the PC-group had a worse survival rate, reflecting the difficult nature of this disease. This is in line with a recent published phase III trial in which patients were randomized to either systemic therapy with or without the addition of early palliative interventions, which did not improve overall survival [7]. This is not difficult to understand, because relapsed and metastatic head and neck cancer has a bad prognosis with little OS benefit even with the recent combination of chemotherapy and immunotherapy approved in the first-line setting. The bad prognosis, with a median OS of 5.9 months in our study, is similar to the 5.6–13 months mentioned in previous studies [2, 3]. This could explain the absence of a survival benefit from the addition of PC in our series. Furthermore, it could also explain the negativity of the only phase III study in head and neck cancers as opposed to other types of diseases, such as lung cancer [5].

We found no differences in the incidence of home deaths and in both groups the majority of patients died in a hospital setting. This is in contrast to other types of cancer, where early palliative care referral in end-of-life care was associated with fewer hospital deaths [19]. This remains an unresolved clinical need for head and neck patients.

Our results reflect the recommendations of oncology societies, which emphasize the importance of quality of life over survival. A key recommendation of the American Society of Clinical Oncology (ASCO) is to offer concurrent palliative provisions for patients with advanced cancer early in their disease course [23]. ASCO evaluated different randomized trials and publications about the role of PC and demonstrated only few examples of a statistically significant improvement in outcomes. Nevertheless, the data showed better management of different issues, such as correct opioid use and end-of-life care. Therefore, ASCO guidelines give importance to PC not for classical oncological outcomes, such as relapse free and overall survival (OS), but for patients’ and caregivers’ well-being, especially symptom management and the decision-making process [23].

In a position paper about key patient-centred care interventions for the multiple needs of patients, the European Society of Medical Oncology (ESMO) mentions the importance of the integration of a multidisciplinary team to improve collaboration with the aim of educating the patient and the caregivers [24]. Our study suggests that oncologists tend to prioritize technical interventions in these patients. To enrich this approach a shared decision-making approach and early involvement of specialized PC to optimize cancer care, patient experience and caregiver education should be fostered [25]. In curative settings, retrospective analysis demonstrated the positive role of multidisciplinary teams (MDT) for better diagnosis and treatment. Therefore, MDT should also include supportive professionals in palliative care to improve outcome [26]. In the palliative setting, this approach is particularly important, because it is challenging for oncologists to identify and support both psychosocial and physical symptoms. A descriptive analysis of a cohort of palliative head and neck cancer patients, based on the clear multilevel needs of these patients, found that more than two-thirds of patients were referred to PC, as in our series [27].

It is important to highlight that the evaluation of the impact of PC provision in high complexity patients, such as head and neck cancer patients, is difficult and studies may not capture the full extent of the benefit of PC provision [28].

Conclusions

Head and neck cancer patients may be at risk of receiving inappropriate invasive treatments close to death and of dying in hospital settings. Further research is needed to investigate
the specific needs of head and neck cancer patients and their families and the areas, where early PC may influence decision-making and management of the physical and psychosocial dimensions.

**Author contributions** All authors contributed to the study conception and design. Material preparation, data collection and analysis were performed by VGE. The first draft of the manuscript was written by VGE and TF. All authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

**Funding** The authors declare that no funds, grants, or other support were received during the preparation of this manuscript.

**Availability of data and materials** Not applicable.

**Code availability** Not applicable.

**Declarations**

**Conflict of interest** The authors have no relevant financial or non-financial interests to disclose.

**Ethical approval** The study was approved by cantonal research ethics committee (Comitato Etico Cantonale, Project-ID 2021-01538 CE 3925).

**Consent to participate** Not applicable.

**Consent for publication** Not applicable.

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Publisher’s Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

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