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Evaluating adherence to the Dutch guideline for diagnosis, treatment and follow-up of laryngeal carcinomas

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Abstract

Background and purpose: An evidence-based clinical practice guideline for laryngeal carcinomas was introduced in the Netherlands late 1999. The objective of this guideline was to ensure uniformity in the diagnosis, treatment, and follow-up. We retrospectively evaluated whether clinical practice changed according to the recommendations of this guideline and whether it succeeded in its aim.

Material and methods: In five out of eight Dutch university hospitals, chart data of 459 patients treated before the guideline introduction were compared to data of 363 patients treated after the guideline introduction.

Results: Patient and tumour characteristics were comparable among both groups. In general, the guideline recommendations were properly complied with. The patients treated before the guideline introduction were actually also for a large part already treated according to the guideline's recommendations. After its introduction, several changes according to the guideline were observed: increased rates of reassessment of biopsy samples taken in local hospitals, psychological screening (although still only performed in 10.5% of patients), application of accelerated radiotherapy schedules, clinical trial treatments, function-preserving treatments, and decreased rates of total laryngectomy, and annual chest X-rays during follow-up.

Conclusions: Although a causal relationship cannot be established in this kind of observational studies, several positive changes were observed after the introduction of the guideline, and therefore the guideline seems to have contributed to more uniformity. The largest changes were seen for the guideline recommendations based on the highest levels of evidence.

Keywords: Guideline; Compliance; Guideline adherence; Larynx cancer; Laryngeal neoplasms; Head and neck cancer

1. Introduction

In the Netherlands, treatment of head and neck cancer is highly centralised in the university medical centres.

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In November 1999, the Dutch Cooperative Head and Neck Oncology Group (NWHHT) and the Dutch Institute for Healthcare Improvement (CBO) issued a national guideline for diagnosis, treatment, and follow-up of laryngeal carcinomas [6].

Clinical practice guidelines can be issued for a variety of reasons. Studies have shown that the clinician's choice between several diagnostic and therapeutic modalities is often not made on scientific grounds [21,22]. In such a situation, a guideline may contribute to rationalising treatment choices. The available literature contains examples of situations in which a guideline contributed to an improvement of curation chances, resulting in higher survival rates [15,26]. Improving or structuring medical care might also be an aim of guideline development [12,25]. Reaching uniformity in diagnosis, treatment, and follow-up can also be an objective of guideline development [24], as well as reducing healthcare costs or improving healthcare efficiency [2,17].

The objective of the Dutch guideline for laryngeal carcinomas has been to ensure uniformity in the diagnosis, treatment, and follow-up [19]. In the 1990s, much attention has been paid to the development of guidelines. However, a post-introduction evaluation of the success of guidelines according to their predefined aims is not routinely done. In the present study, this compliance question was studied for the Dutch guideline for laryngeal carcinomas. Recommendations from the guideline will only be mentioned shortly in this article. For a full and specific overview of all recommendations of this guideline that were evaluated in this study, we refer to an earlier publication in this journal [19]. The focus of the current study has been compliance with recommendations for treatment of primary tumours.

2. Materials and methods

This retrospective study was performed in five university medical centres in the Netherlands, which were assumed to be representative of all eight university centres in the Netherlands. The study consisted of an analysis of treatment data from patients from these institutions. Two groups of patients were defined: pre-guideline (PRE-GL): patients treated before the introduction of the guideline (between January 1, 1995 and April 30, 1999), and post-guideline (POST-GL): patients treated after the introduction of the guideline (between April 1, 2000 and April 30, 2001). The PRE-GL period was chosen because these years were all assumed to be representative of the clinical practice before the introduction of the guideline. The start of the POST-GL period was 6 months after the introduction of the guideline (at this time, the guideline was locally implemented in all participating centres), whereas a later end date was not possible, due to the aim to follow-up every patient one year. Patients were required to have carcinoma of the larynx or a pre-malignant lesion (dysplasia, carcinoma in situ), all stages of the disease were allowed. No exclusion criteria were applied, because of the aim to obtain a population-based sample. The aim was to include 450 patients in both groups. This number was based on practical considerations and not on power calculations, due to the lack of one single uniform outcome measure. For the PRE-GL group, a random computer selection of patients was drawn within the defined time interval, because more than the required number of patients were available for the analysis. For the POST-GL group, data of all consecutive patients in the interval were used in order to reach the targeted number of patients. Data were obtained from patient chart review and anonymously stored into a database. Collected items were: patient characteristics, tumour characteristics, referring clinician, and dates of first visit, follow-up visits, start of treatment, and end of treatment. Main outcome measures were diagnostic modalities applied, psychosocial screening applied, treatment type, treatment aim, and treatment details. All patients were followed from the date of the first visit to the hospital up to one year after the start of the treatment or until death or the occurrence of a recurrent tumour, a metastasis or a second primary tumour.

The statistical analysis was performed using SPSS for Windows, version 10.0. For all comparisons, a two-sided significance level of $\alpha = 0.05$ was used. Categorical variables and patient characteristics were compared by the χ^2 test. Continuous variables were compared by the parametric T-test or Wilcoxon's rank sum test, if appropriate, depending on the variable's distribution.

3. Results

3.1. Patient characteristics

Data of 822 patients were analysed, of whom 459 were included in the PRE-GL group and 363 in the POST-GL group. The majority of patients were males, 390 (85.0%) and 308 (84.8%), respectively. The mean age was 64.5 years (PRE-GL, median 65; range 32–94) and 64.7 years (POST-GL, 65; 28–99). Tumour characteristics of these patients are presented in Table 1. No significant differences were observed regarding tumour characteristic distributions between the two groups.

Of the 459 PRE-GL patients, 368 (80.2%) were followed for one year, whereas 91 (19.8%) were followed less than one year, because of the occurrence of a recurrent tumour (57, 12.4%, mean follow-up in days from treatment start (FU): 217), death (33, 7.2%, FU: 103), or a second primary tumour (1, 0.2%, FU: 274). Of the 363 POST-GL patients, 293 (80.7%) were followed for one year, and 70 (19.3%) for less than one year, due to a recurrent tumour (39, 10.7%, FU: 218), death (30, 8.3%, FU: 121) or a second primary tumour (1, 0.3%, FU: 267).