Cancer Treatment Reviews 69 (2018) 29–38

Contents lists available at ScienceDirect

Cancer Treatment Reviews

journal homepage: www.elsevier.com/locate/ctrv

General and Supportive Care

The Dutch national guideline on metastases and hematological malignancies localized within the spine; a multidisciplinary collaboration towards timely and proactive management

Karlijn H.J. Groenen[a], Yvette M. van der Linden[b], Thea Brouwer[c], Sander P.D. Dijkstra[d], Alexander de Graeff[e], Paul R. Algra[f], Jos M.A. Kuijlen[g], Monique C. Minnema[h], Claudia Nijboer[i], Davey L.H. Poelma[j], Christa Rolf[k], Tebbe Sluis[l], Michel A.M.B. Terheggen[m], Alexandra C.M. van der Togt-van Leeuwen[n], Ronald H.M.A. Bartels[o], Walter Taal[p,*]

[a] Radboud University Medical Center, Radboud Institute for Health Sciences, Orthopaedic Research Laboratory, P.O. Box 9101, 6500 HB Nijmegen, The Netherlands
[b] Leiden University Medical Center, Department of Radiotherapy, Centre of Expertise Palliative Care, P.O. Box 9600, 2300 RC Leiden, The Netherlands
[c] National Federation of Cancer Patient Organizations, P.O. Box 8152, 3503 RD Utrecht, The Netherlands
[d] Leiden University Medical Center, Department of Orthopedics, P.O. Box 9600, 2300 RC Leiden, The Netherlands
[e] University Medical Centre Utrecht, Department of Medical Oncology, P.O. Box 85500, 3508 GA Utrecht, The Netherlands
[f] Alkmaar Medical Centre, Department of Radiology, P.O. Box 501, 1800 AM Alkmaar, The Netherlands
[g] University Medical Centre Groningen, Department of Neurosurgery, P.O. Box 30001, 9700 RB Groningen, The Netherlands
[h] UMC Utrecht Cancer Center, Department of Hematology, PO Box 85500, 3508 GA Utrecht, The Netherlands
[i] VU University Medical Center, Department of Neurology, P.O. Box 7057, 1007 MB Amsterdam, The Netherlands
[j] Radiotherapy Institute Friesland, Borniastraat 36, 8934 AD Leeuwarden, The Netherlands
[k] Community Health Center Hardijzer en Rolf, Jel Rinckesstrjitte 2, 8851 ED Tzummarum, The Netherlands
[l] Rijndam Rehabilitation Centre, SCI Unit, Westersingel 300, 3015 LJ Rotterdam, The Netherlands
[m] Rijnstate, Department of Anesthesiology, Pain Medicine and Palliatieve Care, P.O. Box 9555, 6800 TA Arnhem, The Netherlands
[n] Netherlands Comprehensive Cancer Organisation (IKNL), Vasteland 78, 3011 BN Rotterdam, The Netherlands
[o] Radboud University Medical Center, Department of Neurosurgery, P.O. Box 9101, 6500 HB Nijmegen, The Netherlands
[p] Erasmus MC Cancer Institute, Department of Neuro-Oncology/Neurology, Dr. Molewaterplein 40, 3015 EA Rotterdam, The Netherlands

ARTICLE INFO

Keywords:
Guideline
Evidence-based
Spinal metastases
Prevention
Multidisciplinary
Patient participation
Shared decision making
Organization of care

ABSTRACT

Here, we describe the development of a Dutch national guideline on metastases and hematological malignancies localized within the spine. The aim was to create a comprehensive guideline focusing on proactive management of these diseases, enabling healthcare professionals to weigh patient perspectives, life expectancy, and expected outcomes to make informed treatment recommendations. A national multidisciplinary panel consisting of clinicians, a nurse, a patient advocate, an epidemiologist, and a methodologist drafted the guideline. The important role of patients in the realization of the guideline enabled us to identify and address perceived shortcomings in patient care. The guideline covers not only metastatic epidural spinal cord compression, but also the treatment of uncomplicated metastases and hematological malignancies localized within the spine. The guideline is applicable in daily practice and provides an up-to-date and concise overview of the diagnostic and treatment possibilities for patients suffering from a disease that can have a serious impact on their quality of life. Suggestions for the practical implementation of patient care in hospitals are also provided, including approaches for pursuing proactive management. The crucial role of the patient in decision making is emphasized in this guideline.

Introduction

Global incidence rates of cancer are rising, mainly due to the ageing population [1,2]. These changes will translate to a predicted 20 million new cancer cases worldwide by 2030, compared with an estimated 12.7 million cases in 2008 [3,4]. This increased incidence, combined with the longer survival of patients with cancer, has resulted in more people being confronted with metastatic disease, in which the skeleton is often

* Corresponding author at: Erasmus MC Cancer Institute, Department of Neuro-Oncology/Neurology, Dr. Molewaterplein 40, 3015 GD Rotterdam, The Netherlands.
E-mail address: w.taal@erasmusmc.nl (W. Taal).

https://doi.org/10.1016/j.ctrv.2018.05.013
Received 18 December 2017; Received in revised form 25 May 2018; Accepted 27 May 2018

affected [5–8]. Bone metastases most frequently occur in the spinal column [9]; postmortem examinations have demonstrated that spinal metastases are present in approximately 70% of patients with cancer [10]. More than 50% of spinal metastases are secondary tumors from breast, lung, or prostate carcinomas [11]. Multiple myeloma and sometimes lymphomas may also affect the spinal column [12,13].

Spinal metastases and spinal localizations may lead to back pain, spinal instability, pathological fractures and deformity. Furthermore, epidural growth or vertebral collapse may cause radiating neuropathic pain and neurological deficits because of the compression of the spinal cord or nerve roots, which severely affect the patient's quality of life. Consequently, the provision of information for patients, timely diagnosis, optimized local and/or systemic treatment, and adequate follow-up are of the utmost importance in the prevention or reduction of the progression of spinal metastases towards irreversible neurological damage.

In current clinical practice, the care management of patients with cancer and metastatic disease, including spinal metastases, is often reactive, responding to clinical symptoms rather than trying to proactively prevent complications. The optimal diagnosis and management of patients with spinal metastases requires a multidisciplinary approach. Although difficult to arrange, this is particularly important in emergency situations such as metastatic epidural spinal cord compression (MESCC).

The Dutch health system is a strong proponent of developing guidelines to reduce the nationwide variability in the treatment of many diseases. Many guidelines have been developed since the late 1990s, and are revised every five years [14,15]. These guidelines provide evidence- and consensus-based recommendations and requirements for the standard of care at a national level. Guidelines are also being developed internationally; for example, the American Society for Radiation Oncology (ASTRO), the Italian Orthopaedic Society (SIOT), and the United Kingdom's National Institute for Health and Care Excellence (NICE) have developed guidelines regarding the treatment/management of patients with (spinal) bone metastases [16–19].

In 2013, a national working group started to develop a new guideline for the treatment of patients with cancer and spinal metastases and patients with hematological malignancies localized within the spine. Four important principles were defined at the start:

1. The patient's perspective should lead the discussion. Patients themselves should have an important role in the decision-making process (patient participation).
2. Proactive management should be pursued, resulting in a rapid and adequate diagnosis and treatment and, as much as possible, the prevention of (the progression of) pain and the occurrence of neurological deficits.
3. Clear selection criteria for various treatments should be defined, taking into account the patient's spinal instability, spinal deformity, neurological prognosis, and life expectancy.
4. The organization, communication, and coordination of care should be optimized.

This paper describes the main results used in the evidence-based approach for the development of the Dutch national guideline on metastases and hematological malignancies localized within the spine. In addition, suggestions for its implementation are discussed, and practical considerations are provided to enable institutes to pursue the proactive management and organization of care.

Methods

In 2013, the Dutch Neuro-Oncology Working Group (LWNO), supported by the Netherlands Comprehensive Cancer Organisation (IKNL), formed a multidisciplinary expert working group tasked with drafting a guideline on spinal metastases. Since the symptoms, complications, and treatments of hematological malignancies in the spine are very similar to those of spinal metastases arising from solid tumors, both are included in this guideline. Here, the term 'spinal metastases' includes spinal localizations of hematologic and solid-tumor malignancies, both with and without MESCC, unless otherwise specified.

The members of the working group represented all regions of the Netherlands, both university and general hospitals, and all relevant medical disciplines. All working group members were representatives of their national scientific associations, and had a mandate for their input. The working group members had expertise in anesthesiology/pain medicine, epidemiology, general practice, guideline methodology, hematology, medical oncology, neurology, neurosurgery, nursing, orthopedics, radiology, radiotherapy, and rehabilitation. Most importantly, a patient representative took an active seat in the working group to provide the patient perspective, and was considered a full member of the group. In total, the working group comprised 16 members. The organizing committee asked the federation of patients for their participation, which decided to be represented by one person.

A survey was performed amongst both healthcare professionals and patients to provide an inventory of the perceived bottlenecks in the various trajectories of patient care. The aim of this 'bottleneck analysis' was to provide an overview of all problems or challenges in clinical practice and, as a consequence, to determine the questions relevant for clinical practice. The bottleneck analysis was performed following the methods for developing guidelines outlined by the Dutch health system [20,21]. A list of these bottlenecks was sent out to all related scientific and medical associations and patient organizations in The Netherlands, asking them to (1) indicate whether they agreed with the identified bottlenecks; (2) prioritize the bottlenecks; and (3) indicate whether they perceived additional bottlenecks. In addition to the bottleneck inventory, six patients were recruited through the survey and were interviewed by telephone to gain insights into their perspectives. A total of 67 individuals responded to the bottleneck analysis, resulting in the identification of 17 bottlenecks in addition to the 15 that were initially defined. Subsequently, based on the importance assigned to the bottlenecks by the survey respondents and during discussions within the working group, 14 clinical questions were formulated (Table 1). These questions were addressed by the working group.

Three clinical questions were addressed using an evidence-based approach (questions 2, 4, and 5; Table 1). To answer these questions, a systematic literature search was performed and/or supervised by a literature researcher/methodology expert. In addition, the methodological quality (level of evidence) of the studies was assessed, enabling the assignment of a level of evidence to the guideline's conclusions and recommendations. The work was carried out in accordance with the Guideline for Guidelines [21]. Question 2 was addressed in accordance with the Evidence-Based Guideline Development (EBRO) approach, in which a level of evidence is assigned to each study [22]. The intervention questions (questions 4 and 5) were assessed in accordance with the Grading of Recommendations Assessment, Development and Evaluation (GRADE), in which a pre-defined level of evidence is assigned to each outcome measure [23]. Consequently, within a single study, one outcome measure can be categorized as being of high quality, while another can be assessed as being of low quality. The remaining 11 questions were answered using a consensus-based approach, which in practice meant that the literature search for these questions was carried out by the members of the working group themselves.

Each question was allocated to one of the working group members, based on his or her expertise, who acted as the chair for this issue. In subgroups of two to four group members, the search strategies and subsequently retrieved literature were discussed extensively. The analysis and writing processes for each question were also performed by the respective subgroup, after which the entire working group discussed and revised each chapter in plenary meetings. In total, eight plenary meetings corresponding to approximately 18 h of meeting time were held to discuss and revise the chapters.