

EVALUATING PAIN MANAGEMENT PRACTICES FOR CANCER PATIENTS AMONG HEALTH PROFESSIONALS IN CANCER AND SUPPORTIVE/PALLIATIVE CARE UNITS: A BELGIAN SURVEY

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Abstract

Background Pain is reported in 66% of cancer patients with advanced disease. Adequate pain management is a cornerstone of comprehensive supportive cancer care.

Purpose The purpose of this study was to assess pain management in Oncology Units in Belgium.

Methods A descriptive research design was applied. A structured questionnaire developed by a writing committee was sent to 37 healthcare professionals in 2021. Twenty-four replied.

Results In most centers, pain management is organized through the pain clinic (91.7%), followed by a multidisciplinary team (83.3%) and the palliative care unit (75%). Eighty-seven percent use tools to assess the pain, mostly for in-patients. Pain guidelines are applied in 17 centers with the ESMO guidelines being the most often mentioned. Mild to moderate pain is managed with paracetamol, non-steroidal anti-inflammatory drugs, and tramadol. All centers handle severe pain with strong opioids, including buprenorphine and fentanyl. Only 62% are concerned about the side effects of strong opioids. In case of neuropathic pain, treatments with pregabalin, gabapentine, and tricyclic antidepressants are the most common, followed by opioids and interventional therapies for refractory neuropathic pain. Asking advice to the pain clinic, combination therapy and opioid rotation are used for patients with inadequate analgesia. Eighty to 90% of the centers have access to intraspinal and epidural techniques, respectively. An active teaching program on pain relief is offered in 66%, but only 33% of the centers do active research focused on pain management.

Conclusions This is the first survey on pain management in the Belgian centers. Surprisingly only one-third of the health professionals ask advice to the pain clinic in case of inadequate pain relief, meaning that we are far away from a multidisciplinary patient-centered approach. Therefore, the BSMO

Supportive Care Task Force promotes the development of an interdisciplinary committee in every oncology unit.

Keywords Active research, Assessment tools, Guidelines, Multidisciplinary patient-centered approach, Pain management

Introduction

Pain is one of the most common and feared complications of cancer. Its prevalence is estimated to be over 70%. While being in the range of 30% in patients undergoing curative treatment, the prevalence of pain increases with the progression of the disease and becomes the major concern in patients with advanced or terminal disease [1].

Although the pain mechanisms are probably not different whether pain is due to cancer or to non-cancer causes, pain associated with cancer is not an isolated sensory experience; it influences not only physical function but also behavior, mood, and social relationships. It is also deeply rooted and shaped by beliefs.

There are several phenotypes in cancer pain (e.g., nociceptive, neuropathic, nociplastic, and mixed pain) that may be more or less responsive to analgesics, and certain pain mechanisms may only respond to targeted classes of pain killers [2]. Moreover, approximately 5–10% of cancer patients, namely, survivors, develop chronic cancer pain that significantly interferes with daily functioning [3]. These different types of pain or pain syndromes are present with various frequencies and severities in all stages of cancer and are not always adequately addressed in a significant proportion of patients [4]. As a matter of fact, despite the availability of drugs and guidelines, undertreatment of cancer pain is common.

This is why it is recommended that patients with advanced cancer are managed within an integrated system for supportive and palliative care, including pain management expertise [5].

In a recent survey of available settings and current practice of supportive care in cancer patients in Belgium, we found that pain was managed by “pain management specialists” in 70% of the surveyed centers and that 6 to 43% of the centers, depending on the region, used accepted guidelines [6].

We decided to survey pain management in cancer patients in Belgium and to explore the level of expertise, current practices, adherence to guidelines, and research effort in Belgian cancer units. The purpose of our survey is to provide an overview of the availability and functioning of pain management in this country and to identify potential areas of improvement.

Materials and methods

A structured questionnaire divided in thirteen sections was developed by a writing committee consisting of two radiotherapists, one medical oncologist, one palliative care specialist, one palliative nurse specialist and one supportive care specialist. The content of the questionnaire was guided by the ESMO, NCCN, Palliative, Palliative, and WHO Clinical Practice Guidelines for pain management in adult patients. The survey consisted of different sections with multiple choice questions for the

Institution characteristics and pain management organization; questions with responses based on free text were integrated for the management of opioid side effects, treatment of breakthrough pain, and psychosocial support and both possibilities for questions about the principles of pain management and assessment, cancer pain therapies, treatment of bone pain, metastatic spinal cord compression, pain caused by oral mucositis, and neuropathic pain; the same was true for the questions about the invasive management of refractory pain, chronic pain in cancer survivors and psycho-social support. The questionnaire was sent by mail to the person responsible for pain treatment of each center of the Belgian Society of Medical Oncology, spread over the ten provinces throughout Belgium. Every 3 to 4 months, a reply was sent to the remaining centers, which did not respond. The health professional, who did not respond, was reached out by phone and encouraged to do so. If he had no time, he referred me to the pain or palliative care specialist, who I personally called to explain the purpose of the survey. Most of them agreed to complete the questionnaire. In total, 37 health professionals received the questionnaire and 24 replied (64.8% of the questionnaires sent). The list of the participating centers and the responding professionals in each center are indicated in Table 1 of the Electronic Supplementary Material (ESM). In total, 15 centers from Flanders, 7 from Wallonia, and 2 from Brussels participated in the study from February 2021 until August 2022. The region of Flanders is more densely populated than Wallonia, so it was expected to have more centers coming from Flanders participating in the survey. There are 3 big cancer centers in Brussels of which 2 respond.

Results

This study is an observational survey that gives a partial view of pain management in 19 public and 5 academic institutions. The general information about available services, dedicated structures, and activities in the responding centers is summarized in Table 2 in ESM. Specific services needed to take care of cancer patients are available in more than 50% of the centers. Dedicated supportive care units and day care, which are specialized in treating the side effects of the different cancer treatments, are present in less than 60%.

Pain management, assessment, and guidelines

Pain management is most often organized by the *pain clinic* in a multidisciplinary way or by *the palliative care unit* followed by a *mobile team* as shown in Table 1. *Home care teams* are underrepresented, as well as the possible collaboration with them. In **71% of the centers**, the pain clinic is separate from the supportive/palliative care unit, but they work together in **62%** mainly to provide guidance.

Regular assessment of pain should be an integral part of supportive care and paves the way towards a personalized treatment. In Belgian centers, the validated self-assessment tools are used quite a lot, followed by heteroanamnesis and the mood/anxiety scale. These tools are utilized more often for in-patients than for out-patients and results are recorded in the files mainly by the nurses. More than 75% of health professionals are working with these tools to evaluate cancer pain intensity (Table 2).

Pain guidelines are followed in 17 centers, of which the ESMO Management of Cancer Pain in adult patient guidelines (58.3%) are the most often mentioned, next to the WHO (20.8%) and NCCN (12.5%) guidelines (Table 3 in ESM).

The communication with patients involves many aspects. The mechanism of pain control and evaluation (95.8%), prescription of intake (25%), management of breakthrough pain (20.8%), and side effects (20.8%) are the most basic items to communicate. Doctors and nurses are definitively the main players in this process (Table 4 in ESM).

Cancer pain treatment and side effects

Mild to moderate pain is managed with paracetamol, nonsteroidal anti-inflammatory drugs, and tramadol. All participants handle severe pain with opioids such as morphine and buprenorphine, followed by fentanyl and tramadol. Remarkable is the limited use of ketamine and methadone in the cancer pain armamentarium. Neuropathic pain is preferably treated with pregabalin (95.8%), gabapentin (91.7%), tricyclic antidepressants (91.7%), and strong opioids (87.5%) (Table 3). Fast working opioids are the optimal strategy to solve breakthrough pain, such as oral morphine next to parenteral use (Table 4).

Sixty-two percent of the participants are worried about the side effects of strong opioids with constipation (54.2%), somnolence (20.8%), and confusion (12.5%) on top of their concerns. They are counterbalanced with laxatives and dose reduction, respectively. Opioid-induced nausea and vomiting are effectively treated with alizapride (66.7%), domperidone (37.5%), metoclopramide (33.3%), and haloperidol (20.8%) (Table 5; Table 5 in ESM).

Management of specific patient groups

Patients who are reluctant to take opioids for cultural or religious reasons are well informed by the treating physicians about the benefit and side effects of these drugs, and the possibility to change the pain killer to another one or are assisted by an interpreter or intercultural mediator. Patients with renal insufficiency are preferably treated with a lower starting dose (58.3%) or with a fentanyl patch (41.7%). Those who are unable to swallow are managed with the application of parenteral analgesics (87.5%) or a transdermal approach (70.8%). Clinicians prefer treating with lower dosages in the older population and with close follow-up, taking into account the comorbidities and the advice of the relatives, the general practitioner or the geriatrician. Overall, in our survey, after education and discussion, we try to explain to the non-compliant patients the need and the benefit of taking the prescribed pain medication or we try to change the format. The same is true for the patients with fear for addiction.

Inadequate pain relief will be solved by asking advice to the pain clinic (33.3%), application of combination therapy (33.3%), starting opioid rotation (25%), or interventional therapy (25%). Patients are managed by education and explanation (60.4%), analgesic switch (17.4%), with respect (17.4%) and by an interpreter or by an intercultural mediator (8.7%) (Table 6).

Treatment of metastatic bone pain

Painful bone metastases are irradiated in 75% of the centers mostly in combination with steroids. In 37.5% radioactive isotopes are used, namely, in prostate cancer (25%). An anti-osteoclastic therapy (66.7%), mainly denosumab, is preferred as adjuvant therapy after a careful dental check-up. In case of metastatic spinal cord compression, neurosurgeons and radiotherapists are uniformly involved and steroids are immediately started (Table 6 in ESM).

Treatment of painful oral mucositis

Analgesic mouth wash (83.3%) and laser therapy (87.5%) are the preferred treatments for painful oral mucositis, followed by parenteral opioids (20.8%) and patch application (8.3%). Oral mucositis is prevented by applying oral mouth wash (62.5%), oral hygiene (37.5%) and growth factors (4.2%) (Table 7 in ESM).

Management of neuropathic and refractory pain

In more than 85% of the centers, neuropathic pain is treated with opioids. Buprenorphine (37.5%) and morphine (20.8%) are mostly applied. In case of refractory pain, nerve injury, visceral pain and plexus invasion, different interventional possibilities are applied, such as epidural anesthesia (29.2%), plexus analgesia (25%), nerve block (20.8%), and infiltration (8.3%) (Table 8 in ESM).

Epidural and intraspinal techniques are available in respectively 91% and 83% of the centers. The pain team, and more specifically the anesthesiologist, are using these techniques in case of inadequate pain relief, neuropathic pain or side effects caused by the pain medication. Spinal cordectomy is done in one third of the centers. Coeliac plexus block is performed in most centers by anesthesiologists (25%), the pain team (25%), gastroenterologists (12.5%), and radiologists (4.2%) (Table 7).

Psychosocial support

Oncologists ask advice to the psychiatrist (50%), a multidisciplinary team (20.8%) or a neurologist (8.3%) to treat patients with delirium or confusion. We prefer to start with medication (29.2%), rather than to look for the causal factors (16.7%) or we decide to hospitalize (8.3%) these patients when the social situation becomes too difficult for the relatives.

Patients with severe pain are seen by the psychologist or psychiatrist in 62.5% of the centers. Most nurses are involved in the follow-up of the patient (50%) by repeating the VAS scale (33.3%), discussing with the pain team (29.2%), and by supporting the patient (29.2%). They also educate the patient (12.5%) and check their medications (12.5%) (Table 9 in ESM).

Management of chronic pain

Most oncologists (83.3%) take care of cancer survivors with complaints of chronic pain, but no multidisciplinary structure or guidelines (50%) are available. Regarding the use of strong opioids, most physicians resort for further advice to a multidisciplinary dedicated team or the pain clinic (Table 10 in ESM).

Complementary medicine

Only 10 centers have a dedicated structure offering complementary therapies such as mindfulness (50%), massage (37.5%), wellness (12.5%), relaxation techniques (12.5%), yoga (12.5%), hypnosis (12.5%), and acupuncture (8.3%) (Table 8).

Research and education

Unfortunately, research focused on pain management is only reported in 30% of the centers. Most of the health professionals (79.2%) can participate in external teaching programs (Table 11 in ESM).

Discussion

Treatment of cancer pain is a complex and multifaceted issue where intense collaboration and exchange between patients and different health professionals is crucial. However, we found such a collaboration in only 60% of the Belgian oncology centers, namely, between pain specialists and the supportive care team and even less with the home care team. Traditionally, cancer pain is firstly managed by the medical oncologist, but timely referral to an expert team should be sought for in case of inadequate pain relief.

As recommended by Escobar et al. [7], patients with cancer pain should be referred to a multidisciplinary pain team much earlier in the course of their work-up by the managing oncologist. Therefore, guidelines and clear care pathways should be defined to avoid undue delays in optimal management.

As shown in our survey, the current practice for cancer pain among Belgian oncologists appears to be largely in accordance with the recommendations of the WHO and other expert associations [8, 9]. Paracetamol, tramadol, and non-steroidal anti-inflammatory drugs are widely used for moderate pain while morphine, buprenorphine and fentanyl represent the usual approach for severe pain. Surprisingly, the use of methadone and ketamine is reported in less than 50% of the centers; this might be due to the special expertise required for the administration of these medications.

Special approaches such as the application of local anesthetics (e.g., lidocaine patches) or nitrous oxide administration for painful procedures, were only seldom reported although routine use might be expected; this might be due to a lack of broad availability.

Overall, neuropathic pain was also treated according to guidelines in most centers with pregabalin, gabapentin, tricyclic antidepressants, and duloxetine/venlafaxine being used in over 90% of the surveyed centers [9].

It is remarkable that only 33% of Belgian health professionals do ask advice to the pain clinic in case of inadequate pain relief and only 25% do apply opioid rotation. Eighty to 90% of the centers do have interventional techniques available in case of neuropathic pain or inadequate analgesia, mostly performed by anesthesiologists.

This means that nowadays we are far away from a patient-centered care in a multidisciplinary way and that there is a high need for shared clinical case discussions, common management protocols and common referral arrangements [10]. To improve cancer pain care, the BSMO (Belgian Society of Medical Oncologists) Supportive Care Task Force promotes the setting-up of an interdisciplinary committee focusing on the quality pain management in every oncology unit.

As we do have many survivors with chronic pain, for whom we do not have good therapeutic options, a multidisciplinary team should be involved in the care of these patients.

Only 40% of the patients do have access to complementary medicine, possibly due to the non-reimbursement of these techniques and moderate level of evidence to recommend them, although there is an increasing trend to use these approaches [11].

Active teaching programs are available in more than 60 to 79% of the Belgian oncology centers, but active research is only carried out in 1 center out of 3, pinpointing the need for more research in pain management in Belgium.

We have to mention some weaknesses in our study as we did not ask for the use of e-health application as a tool to report patient outcomes, a procedure that became more important during the COVID period. Another area that we did not highlight was the training and education level of the oncologists or other pain health care professionals as inadequate knowledge regarding pain management is one of the most pervasive barriers [12]. Neither did we address the implication of the pharmacists in the multidisciplinary pain board meetings [13]; last but not least the ability of analgesic adverse drug reaction notification and follow-up visit of discharged cancer pain patients should also have been mentioned in the questionnaire.

Conclusion

This is the first survey on pain management in 24 Belgian oncology centers mainly answered by medical oncologists (66.7%). We would have liked to have more centers on board, but due to the COVID pandemic, it was difficult to involve more participants. Nevertheless we think that our results adequately represent the Belgian situation, namely in detecting some gaps in the multidisciplinary approach of cancer pain management; a major goal for future involvement of the BSMO Supportive Care Task Force would be to develop common guidelines for a more patient-centered approach of pain management in a real multidisciplinary fashion.

Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1007/s00520-024-08984-4>.

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Author contribution

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Data availability

No datasets were generated or analysed during the current study.

Declarations

Ethics approval Not applicable.

Competing interests The authors declare no competing interests.

Tables

Table 1 Different services and organization of pain management

Pain clinic	22 (91.7%)
Multidisciplinary team	20 (83.3%)
Palliative care unit	18 (75%)
Multidisciplinary oncology consultation	16 (66.7%)
Mobile unit	16 (66.7%)
Specific consultations	14 (58.3%)
Supportive care unit	12 (50%)
For in- and out-patients	24 (100%)
For home patients	13 (54.2%)
<i>Is the pain team different from the supportive care team?</i>	
Yes	17 (70.8%)
No	6 (25%)
<i>Is there a collaboration with the supportive care team?</i>	
Yes	15 (62.5%)
No	8 (33.3%)
<i>What kind of collaboration?</i>	
Multidisciplinary advice	11 (45.8%)
Discussion about invasive procedures	2 (8.3%)
Discussion via liaison nurse	1 (4.2%)
Collaboration with the home care team	13 (54.2%)

Table 2 Pain assessment tools

<i>Do you use them?</i>	
Yes	21 (87.5%)
No	2 (8.3%)
<i>For whom?</i>	
For in-patients	19 (79.2%)
For out-patients	12 (50%)
<i>Which tools do you use?</i>	
Pain self-assessment	19 (79.2%)
Hetero assessment	17 (70.8%)
Mood/anxiety scale	11 (45.8%)
Multidimensional tool	10 (41.7%)
QoL scale	10 (41.7%)
Others	3 (12.5%)
<i>Notation in the file</i>	
Yes	18 (75%)
No	2 (8.3%)
<i>By whom?</i>	
Nurses	15 (62.5%)
Doctors	6 (25%)
<i>Who uses these tools?</i>	
Nurses	20 (83.3%)
Doctors	19 (79.2%)

Table 3 Different drugs for pain management

<i>Drug</i>	<i>Mild intensity N (%)</i>	<i>Moderate intensity N (%)</i>	<i>Severe intensity N (%)</i>	<i>Neuropathic pain N (%)</i>
Paracetamol	23 (95.8%)	21 (87.5%)	14 (58.3%)	6 (25%)
NSAID	13 (54.2%)	20 (83.3%)	14 (58.3%)	3 (12.5%)
Tramadol	6 (25%)	21 (87.5%)	13 (54.2%)	9 (37.5%)
Acetylsalicylic acid	8 (33.3%)	7 (29.2%)	4 (16.7%)	1 (4.2%)
Dihydrocodeine	8 (33.3%)	9 (37.5%)	2 (8.3%)	1 (4.32%)
Morphine		11 (45.8%)	23 (95.8%)	13 (54.2%)
Buprenorphine	1 (4.2)	14 (58.3%)	20 (83.3%)	12 (52.2%)
Fentanyl		7 (29.2%)	19 (79.2%)	7 (29.2%)
Methadone		2 (8.3%)	9 (37.5%)	6 (25%)
Tapentadol	1 (4.2%)	6 (25%)	9 (37.5%)	6 (25%)
Ketamine PO		1 (4.2%)	10 (41.7%)	8 (33.3%)
Ketamine IV		1 (4.2%)	6 (25%)	6 (25%)
Piritramide	1 (4.2%)	3 (12.5%)	9 (37.5%)	
Pethidine	1 (4.2%)	1 (4.2%)	4 (16.7%)	
Pregabalin	1 (4.2%)	3 (12.5%)	5 (20.8%)	23 (95.8%)
Gabapentin	1 (4.2%)	3 (12.5%)	5 (20.8%)	22 (91.7%)
Tricyclic antidepressant	1 (4.2%)	2 (8.3%)	3 (12.5%)	22 (91.7%)
Duloxetine	1 (4.2%)	2 (8.3%)	2 (8.3%)	18 (78.2%)
Venlafaxine	2 (8.3%)	1 (4.2%)	1 (4.2%)	11 (47.8%)
Clonidine PO	1 (4.2%)	4 (17.4%)	8(33.3%)	7(29.2%)
Clonidine IV			2 (8.3%)	2 (8.3%)
Lidocaine plaster	3 (12.5%)	6 (25%)	3 (12.5%)	9 (37.5%)
Capsaicin		4 (16.7%)	1 (4.2%)	7 (29.2%)
Lidocaine/prilocaine patch	10(41.7%)	4 (16.7%)	4 (16.7%)	5 (20.8%)
Cannabinoids	2 (8.3%)	3 (12.5%)	5 (20.8%)	4 (16.7%)
MEOPA	3 (12.5%)	3 (12.5%)	4 (16.7%)	1 (4.2%)

Table 4 Management of breakthrough pain

<i>What is your strategy?</i>	<i>N (%)</i>
Fast working opioids	17 (70.8%)
Drug evaluation/monitoring	7 (29.2%)
Explanation	4 (16.7%)
Evaluation through VAS/NRS	3 (12.5%)
<i>Which medication do you prefer?</i>	
Oral/orodispersible morphine	16 (66.7%)
Morphine SC/IV	5 (20.8%)
Fentanyl transmucosal	3 (12.5%)
Buprenorphine SL	3 (12.5%)
Paracetamol SL	2 (8.3%)
Palladone IR	1 (4.2%)
Steroids	1 (4.2%)
NSAID	1 (4.2%)
Tapentadol	1 (4.2%)
Ketamine syrup	1 (4.2%)
Pregabalin	1 (4.2%)
Midazolam	1 (4.2%)
<i>Do you have other suggestions?</i>	
Ask the anesthesiologist	1 (4.2%)
Intrathecal bolus	1 (4.2%)

Table 5 Side effects of strong opioids

<i>Are you worried about the side effects?</i>	<i>N (%)</i>
Yes	15 (62.5%)
No	8 (33.3%)
Constipation	13 (54.2%)
Somnolence	5 (20.8%)
Confusion	3 (12.5%)
Nausea	3 (12.5%)
Respiratory depression	3 (12.5%)
Urinary retention	2 (8.3%)
Delirium	2 (8.3%)
Itching	1 (4.2%)
Sleepiness	1 (4.2%)
Loose of appetite	2 (8.3%)
Dizziness	1 (4.2%)
Falls	1 (4.2%)
Coma	1 (4.2%)

Table 6 Management of specific patient groups

<i>How do we treat patients with a GFR < 30 ml/min</i>	
Start with a lower dose and titrate	14 (58.3%)
Start with fentanyl	10 (41.7%)
Start with buprenorphine	3 (8.712.5%)
Start with methadone	2 (8.3%)
Start with piritramide	1 (4.2%)
Consultation with a nephrologist	1 (4.2%)
Use tramadol	1 (4.2%)
Use palladone	1 (4.2%)
<i>How do you treat patients who were unable take oral medication?</i>	
Transdermal route	17 (70.8%)
Subcutaneously	12 (50%)
Intravenously	9(37.5%)
Intrathecal	1 (4.2%)
<i>How do you manage cancer pain in geriatric patients?</i>	
Start with a lower dose	12 (50%)
Close follow-up	5 (20.8%)
To look at comorbidities	3 (12.5%)
Discuss with relatives	3 (12.5%)
Avoid tramadol	2 (8.3%)
Discussion with geriatrician	2 (8.3%)
Discussion with the general practitioner	2 (8.3%)
Start with paracetamol	1 (4.2%)
<i>How do you manage non-compliant patients?</i>	
Explanation and education	18 (75%)
Switch to another form	4 (16.7%)
Onco-nurse	1 (4.2%)
Close follow-up	1 (4.2%)
Communication with general practitioner	1 (4.2%)
<i>How do you manage inadequate analgesia despite opioid escalation?</i>	
Ask advice of the pain clinic	8 (33.3%)
Combination therapy	8 (33.3%)
Opioid rotation	6 (25%)
Interventional therapy	6 (25%)
Reassess pain etiology	5 (20.8%)
Switch to alternatives	3 (12.5%)
Antidepressants	1 (4.2%)
<i>How do you manage fear for addiction?</i>	
Explanation and education	22 (91.7%)
Start with a lower dose	3 (12.5%)
Look for other possibilities	34(12.5%)
<i>How do you manage patients reluctant to take opioids due to cultural or religious reasons?</i>	
Education and explanation	15 (60.4%)
Analgesic switch	4 (16.7%)
Respect	5 (20.8%)
Ask advice to an interpret	2 (8.3%)
Start with a lower dose	1 (4.2%)
Onco-nurse	1 (4.2%)

Table 7 Invasive techniques

<i>Do you have access to epidural techniques?</i>	
Yes	22 (91.7%)
No	1 (4.2%)
<i>Do you have access to intraspinal techniques?</i>	
Yes	20 (83.3%)
No	3 (12.5%)
<i>What are the most common indications?</i>	
Inadequate pain relief	12 (50%)
Neuropathic pain	4 (16.7%)
Side effects	2 (8.3%)
<i>Who is in charge of the procedure?</i>	
Anesthesiologist	14 (58.3%)
Pain team	8 (33.38%)
<i>Do you have experience with spinal cordectomy?</i>	
Yes	8 (33.3%)
No	13 (54.2%)
<i>Do you have experience with lobotomy?</i>	
Yes	1 (4.2%)
No	19 (79.2%)
<i>Other neuro-surgical techniques?</i>	
Yes	9 (37.5%)
No	10 (41.7%)
<i>Is coeliacus plexus block available?</i>	
Yes	22 (91.7%)
<i>Who is in charge of the procedure?</i>	
Pain team	6 (25%)
Anesthesiologist	6 (25%)
Gastroenterologist	3 (12.5%)
Radiologist	1 (4.2%)

Table 8 Complementary and alternative medicine

<i>What kind of CAM is implemented in your center?</i>	
Mindfulness	12 (50%)
Massage	9 (37.5%)
Yoga	3 (12.5%)
Relaxation techniques	3 (12.5%)
Wellness	3 (12.5%)
Hypnosis	3 (12.5%)
Acupuncture	2 (8.3%)
Aromatherapy	2 (8.3%)
Eye movement desensitization and reprocessing (EMDR)	1 (4.2%)
Music therapy	2 (8.3%)
Sophrology	1 (4.2%)
Reflexology	1 (4.2%)
Reiki	1 (4.2%)
Aesthetic care	1 (4.2%)
None	1 (4.2%)
<i>Do you have a special unit?</i>	
Yes	10 (41.7%)

References

1. Haenen V, Evenepoel M, De Baerdemaeker T et al (2023) Pain prevalence and characteristics in survivors of solid cancers: a systematic review and meta-analysis. *Support Care Cancer* 31:85. <https://doi.org/10.1007/s00520-022-07491-8>
2. Fernández-de-las-Peñas C, Lahousse A, Nijs J et al (2023) Towards precision pain medicine for pain after cancer: the Cancer Phenotyping Network multidisciplinary international guidelines for pain phenotyping using nociplastic pain criteria. *Br J Anaesth* 130(5):611–621. <https://doi.org/10.1016/j.bja.2022.12.013>
3. Brown MDR, Juan D, Ramirez JD, Paul Fraquhar-Smith P (2014) Pain in cancer survivors. *Br J Pain* 8:139–153
4. Breivik H, Cherny N, Collett F et al (2009) Cancer-related pain: a pan-European survey of prevalence, treatment, and patient attitudes. *Ann Oncol* 20:1420–1433
5. Greco MT, Roberto A, Corli O et al (2014) Quality of pain management: an update of a systematic review of undertreatment of patients with cancer. *J Clin Oncol* 32:4149–4154
6. Fontaine C, Echterbille ML, Klastersky on behalf of the BSMO supportive care working group (2021) Supportive care for cancer patients: a survey of available settings and current practices in Belgium. *Supportive Care in Cancer* 29:5507–12
7. Escobar Y, Margarit C, Pérez-Hernández C et al (2022) (2022) Good practice recommendations to better coordinate the management of oncological pain: a Delphi survey. *Sci rep* 12:22459. <https://doi.org/10.1038/s41598-022-26753-3>
8. World Health Organization (1996) *Cancer pain relief*, 2nd edn. WHO, Geneva
9. Fallon M, Giusti R, Aielli F et al (2018) Management of cancer pain in adult patients: ESMO Clinical Practice Guidelines. *Ann Oncol* 29:iv166-191
10. Bakitas M et al (2015) Early versus delayed initiation of concurrent palliative oncology care: patient outcomes in the ENABLE III randomized controlled trial. *J Clin Oncol* 33:1438–1445
11. Mao JJ, Ismaila N, Bao T et al (2022) Integrative medicine for pain management in oncology: Society for Integrative Oncology ASCO Guideline. *J Clin Oncol* 40:3998–4024
12. Kwon JH (2014) Overcoming barriers in cancer pain management. *J Clin Oncol* 32(16):1727–1733
13. Hammer KJ, Segal EM, Alwan L et al (2016) Collaborative practice model for management of pain in patients with cancer. *Am J Health-system Pharm* 73(18):1434–1441

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