Marcin Janecki[1, 2], Joanna Janecka[2], Jadwiga Pyszkowska[2]
[1]Zakład Medycyny i Opieki Paliatywnej Katedry Pielęgniarstwa Śląskiego Uniwersytetu Medycznego w Katowicach
[2]NZOZ Hospicjum Miłosierdzia Bożego w Gliwicach

Diagnosis and treatment of cancer breakthrough pain in opinions of physicians working in Outpatients' Palliative Care Units and Pain Clinics

Abstract

Breakthrough pain (BtP) is common among patients suffering from cancer pain. The experience, knowledge and education of palliative care physicians or pain management specialists seem to be essential for proper diagnosis and treatment of breakthrough pain. The purpose of this study was to determine the scope and assess the knowledge of physicians regarding BtP and its management. 135 physicians have participated in the study and completed special questionnaires for the period from April to July 2010. The vast majority of surveyed physicians (133 out of 135) declared that they diagnosed the BtP in their patients, usually 2 to 3 episodes a day. The time for the pain to become maximal, in the opinion of 73% of physicians, was usually between 5 to 30 minutes, the average duration of the breakthrough pain episode approximately was 15––30 minutes. The vast majority of respondents prescribed pharmacological treatment to manage the BtP episodes, most commonly morphine, non-steroidal anti-inflammatory drugs, acetaminophen and tramadol.

Key words: breakthrough pain, cancer pain, palliative care outpatient, pain clinic

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Introduction

Available data indicates that there are approximately 25 million people with cancer in the world today. 30–40 percent of the patients experience pain even at the time of diagnosis, and this number is definitely increasing as the disease progresses. At the end of life, up to 70–90 percent of patients suffer from pain [1]. Breakthrough pain (BtP) is a common phenomenon among the population of patients with cancer pain. It is estimated that it is present in 40–80% of patients in this group [2]. Breakthrough pain is defined as a tran-sient exacerbation of pain, which can occur either spontaneously or under the influence of a specific stimulus, either predictable or unpredictable, despite relatively stable and well-controlled background pain. Short-acting opioids, referred to as the rescue medication, are usually used as the therapy, in addition to analgesics given in the around-the-clock regimen [3]. Although BtP is not a rare phenomenon, its diagnosis and treatment still leaves much to be desired. Hence, it appears that

Address for correspondence: Marcin Janecki
Zakład Medycyny i Opieki Paliatywnej Katedry Pielęgniarstwa Śląskiego Uniwersytetu Medycznego w Katowicach
ul. Medyków 12, 40–752 Katowice
e-mail: janeckimarcin@op.pl

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the basic and essential element in determining the appropriate treatment of breakthrough pain is the education and knowledge of physicians working in outpatients' pain clinics and palliative care units. The aim of this study was to determine the extent of education of physicians working in outpatients' pain clinics and palliative care units in Poland, regarding breakthrough pain and its treatment.

Methods

135 physicians, who are working in outpatients' pain clinics and palliative care units (34 and 11 respectively) on Polish territory, participated in the study.

The questionnaire developed for the study, which was used to perform the survey, contained 12 questions. Percentage values were used for the analysis of the responses given by the participating physicians. Charts and tables have been drawn by means of graphic software.

Results

The questionnaire has been completed and returned by 135 physicians who treated patients suffering from cancer pain. Apart from the cancer, another significant problem, according to the respondents, was pain caused by cancer treatment: surgery, radiation therapy and chemotherapy (responses given by 17.8%, 16.3% and 11.1% of physicians, respectively) and also due to co-morbidities, as selected by 8.15% physicians. None of the respondents indicated pain of unknown origin. Most of the surveyed physicians (76.3%) declared that they diagnosed mixed pain (nociceptive and neuropathic). 9.6% of the physicians observed in their patients somatic nociceptive pain only, and 21.5% of the physicians recorded the occurrence of visceral pain. One in six respondents declared the presence of neuropathic pain in their patients. When asked about the choice of drugs they used to treat cancer pain, the respondents most often indicated morphine (96% of physicians), fentanyl (78%), and non-steroidal anti-inflammatory drugs (73%). Nearly as many of them declared that they prescribed tramadol (2/3 of physicians) and acetaminophen (61%). Methadone (3.7%) and oxycodone (0.74% — prescribed by one person only) were used very rarely, as during the study period the reimbursement status of these drugs limited their availability to patients (Table 1).

The vast majority of the participating physicians (133 out of 135 — 98.32%) declared that they diagnosed breakthrough pain in their patients. Only one medical practitioner (0.74%) reported that he or she did not recognize episodes of breakthrough pain, and one person did not answer this question. Despite the explicit requests to respond to no further questions, both respondents continued to fill out the questionnaire.

Table 1. Drugs prescribed by physicians to control background pain (more than one answer was possible)

Analgesic used	Number of answers	% of answers
Paracetamol	82	61
NSAIDs	98	73
Codeine	7	5
Dihydrocodeine	42	31
Tramadol	91	67
Morphine	129	96
Fentanyl	105	78
Buprenorphine	41	30
Methadone	5	3,7
Oxycodone	1	0,74

According to the responses of the participating physicians, the etiology of breakthrough pain is usually only associated with the underlying disease, as indicated by two thirds of the respondents. One in three doctors indicated underlying disease and its treatment as the cause, and only 8% of physicians indicated a relationship between breakthrough pain and the treatment of the underlying disease.

The kind of breakthrough pain that was most frequently indicated by physicians was mixed pain (according to 57.8% of respondents), followed by nociceptive pain (34.8%) and neuropathic pain (17.8%).

A half of the physicians (50.4%) selected the occurrence of spontaneous breakthrough pain. 34% of the respondents defined breakthrough pain as incidental and unrelated to the patients' actions. One in five doctors (20.74%) declared that breakthrough pain was incidental and related to the patients' actions. According to 43% of doctors, patients experienced an average of two episodes of breakthrough pain a day. 37.8% of physicians reported an average of 3 episodes of breakthrough pain a day. At the same time, ten medical practitioners (7.41%) diagnosed 4, and four (2.96%) diagnosed more than 4 episodes of breakthrough pain per day (Table 2). Nearly a half of the physicians (45.9%) said that the average time for the breakthrough pain to reach maximum intensity was 5 to 15 minutes.

Table 2. Number of BtP episodes and average time for BtP to reach maximum intensity

Number of BtP episodes	Number of physicians	% of physicians	Avg. time for BtP to reach max. intensity	Number of physicians	% of physicians
1	8	5,93	0–5 min	31	22,96
2	58	42,96	5–15 min	62	45,93
3	51	37,78	15–30 min	37	27,41
4	10	7,41	> 30 min	0	0
> 4	4	2,96	Unable to determine	3	2,22
No answer	4	2,96	No answer	2	1,48
Sum	135	100	Sum	135	100

Over a quarter of the respondents (27.4%) indicated the answer "15 to 30 minutes", and about 5 percentage points less (23%) chose the answer "up to 5 minutes." 3 doctors (2.22%) declared that they were not able to determine the time for the breakthrough pain to reach maximum intensity in their patients (Table 2). More than a half of the participating physicians (56.3%) reported the average duration of episodes of breakthrough pain as lasting for 15–30 minutes. Approximately 1/6 of respondents indicated "5–15 minutes" and "more than 30 minutes" (17.8% and 15.6%, respectively). Less than 3% of the respondents declared that they were not able to determine the average duration of episodes of breakthrough pain in their patients (Table 3). Almost all the physicians (97.78%) declared the use of medication to control breakthrough pain. Only two people stated that they did not use such treatment, and one respondent did not answer this question. While answering the question regarding the active ingredients used in the treatment of breakthrough pain, the vast majority of respondents reported morphine (96.3%). Half of the physicians (51.1%) declared that they used non-steroidal anti-inflammatory drugs, 40% — acetaminophen, and almost 30% — tramadol (Table 4).

Table 3. Average duration of BtP episodes

Average duration of BtP episodes	Number of physicians	% of physicians
0–5 min	8	5,93
5–15 min	24	17,78
15–30 min	76	56,30
> 30 min	21	15,56
Unable to determine	4	2,96
No answer	2	1,48
Sum	135	100

Table 4. Drugs prescribed by physicians to control BtP episodes (more than one answer was possible)

Analgesic used	Number of answers	% of answers
Paracetamol	54	40
NSAIDs	69	51,11
Codeine	10	7,41
Dihydrocodeine	0	0
Tramadol	40	29,63
Morphine	130	96,3
Fentanyl	10	7,41
Buprenorphine	5	3,7
Methadone	1	0,74
Oxycodone	0	0
Other	6	4,44

Discussion

Breakthrough pain is defined as a transient exacerbation of pain, which can occur either spontaneously or under the influence of a specific stimulus, predictable or unpredictable, despite relatively stable and well-controlled background pain. Despite its inherently self-limiting nature, breakthrough pain (BtP) can be a huge problem and a physical, psychological and economic burden for patients suffering from cancer and cancer pain, as well as their families and people who provide care and treatment to these patients [3]. Appropriate and successful treatment of BtP may require a combination of non-pharmacological and pharmacological treatment strategies. The most popular form of pharmacotherapy is the use of analgesic drugs called rescue medications. The ideal rescue medication should be characterized by a short

time to the onset of action, good efficacy, relatively short duration of action, and a good safety profile [4]. The drug should be administered before or shortly after the onset of a breakthrough pain episode. It has been demonstrated that the effective treatment of breakthrough pain can significantly improve the quality of life of patients [3–5]. Despite the fact that a number of publications extensively describing the pathophysiology, epidemiology, diagnosis, and treatment of breakthrough pain, it seems that there is still a large gap between this knowledge and daily practice, even in such specialized centers as palliative care units and pain clinics.

The purpose of this study was to assess the knowledge of specialists working in outpatient palliative care and pain management clinics in Poland on the diagnosis and treatment of episodes of BtP. 135 doctors decided to participate in the survey and all of them returned completed questionnaires. As can be seen from the questionnaires, the vast majority of physicians (98.52%) diagnosed episodes of breakthrough pain in their patients with cancer pain. Moreover, knowledge of the nature of these episodes is very detailed. Doctors diagnose and have knowledge of the neurophysiological nature of BtP, the time it takes for the pain to rise in intensity, and its duration. The data obtained correlates with the literature data concerning the characteristics, to include qualitative ones, of breakthrough pain episodes [6–8]. Most physicians recognize BtP and the vast majority of them recommend pharmacotherapy to their patients (97.78% of respondents), mainly using morphine preparations (96.3%). These declarations are consistent with the results obtained in studies of breakthrough pain in patients treated in cancer centers in UK. Out of 87 patients suffering from BtP, 81 were prescribed opioid rescue medication [5]. There is still no answer to the question of how patients comply with the recommendations and whether they use the prescribed medication in the event of subsequent episodes of breakthrough pain. British studies have shown that most patients take drugs much less frequently than the number of BtP episodes they declared would require [5]. The results of experiments performed by Italian researchers were different. One study showed that in 59.2% of cases, breakthrough pain was treated with additional doses of opioids, in 19.5% cases with non-steroidal anti-inflammatory drugs, and 21.3% of patients were not offered any additional treatment [9]. Interestingly, in terms of quantity of opioids used per capita, Poland, like Italy, occupies one of the last places in Europe. Meanwhile, the declared treatment of cancer breakthrough pain episodes is more typical of countries with well-established opioid consumption (like the UK) [9, 10]. It is difficult to draw conclusions concerning the treatment of the entire population of patients with cancer pain in Poland; however, it can be stated that the specialists working in the outpatients' clinics (palliative care and pain management) are very well prepared to diagnose and treat BtP. While analyzing the whole issue, some concerns remain regarding the declaration that NSAIDs and acetaminophen were used in the treatment of BtP (such responses were given by 51.1% and 40% of respondents, respectively). Unfortunately, the survey did not include a question on whether these drugs were used as adjunctive therapy in combination with an opioid or as a stand-alone treatment option.

Another issue is the lack (at the time of the survey) of alternatives available to the patient regarding the "rescue" oral opioid formulations in the form of transmucosal fentanyl in Poland. The pharmacokinetic profile of transmucosal preparations is different from oral medications, and can be a very good addition to the therapeutic options available, allowing the physician the right "fit" for the treatment of diagnosed episodes of breakthrough pain [11, 12].

In conclusion, studies confirm that doctors working in outpatient palliative care and pain management units have essential theoretical knowledge and are well pre pared for the diagnosis and treatment of breakthrough pain episodes. The results presented above should be notwithstanding considered as preliminary, and some issues (especially on pharmacotherapy) should be deepened in the future to get a clearer picture of the Polish practice of treating cancer BtP, particularly in relation to the greater availability of drugs that are likely to be used.

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