

## PROPER TREATMENT OF PAIN AS A PUBLIC HEALTH PRIORITY

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### Summary

Pain is a global public health problem. Untreated, insufficiently treated or poorly controlled is the most common health problem. It affects the structure of society, its functioning and the economic situation on a global scale. Therefore, effective pain control should be one of the priority objectives of European health policy. Pain is a complex phenomenon. It is necessary to correctly diagnose it and treat it properly.

### Introduction

The European Convention on Human Rights imposes on the state an obligation to introduce an effective system of pain management. Access to appropriate care, therapy and provision of access to a team that consults painkillers in hospitals is an important element in the implementation of state obligations in the field of basic human rights and freedoms. [1-5]

## **Choosing the optimal analgesic therapy**

According to the recommendations of the International Society for the Study of Pain (IASP), the application of multidirectional treatment not only reduces pain but improves the quality of life of patients with chronic pain, including cancer. The multi-directional model of pain treatment should include treatments in the field of anesthesia, eg blockages, neurodestructive treatments and pharmacotherapy, physiotherapy and psychotherapy.

Pain is considered the most unpleasant experience both physical and mental. [6] Very often fear and depression accompany pain. It paralyzes the lives of patients and their families, causing physical suffering; and by affecting the psyche significantly reduces the quality of life.

Painkilling treatment for cancer patients is extremely important for a number of reasons. The most important is to alleviate unnecessary suffering and to prevent the destructive influence of pain on a patient's life. Untreated pain limits social and occupational activity.

Pain in patients diagnosed with cancer is one of the most important clinical problems in every period of the disease. Pain can be both the first symptom and accompany the patient during the remission period. The incidence of pain in patients during oncology and advanced stages is estimated at 44-73% and 58- 69%, respectively; the incidence of pain in all periods of cancer is in the range of 43-63%. [7]

Planning analgesic treatment includes assessment of both quantitative and qualitative pain including mental, spiritual and social suffering, diagnosis of the type of pain according to pathomechanism, evaluation of current treatment, assessment of coexisting symptoms such as dyspnea, edema, vomiting, appetite disorders, depression, weakness, insomnia . [6.10]

To properly choose a therapy for analgesics, the optimal route of administration should also taking into account the preferences of the patient. It is necessary to monitor the effectiveness of treatment as well as side effects and interactions.

A three-stage analgesic ladder has become the global standard for analgesic treatment. Pain therapy according to the scheme of the above ladder allows to achieve analgesic effect in 70 to 90% of cancer patients. [7,8] Pain in the course of cancer is mixed and is the result of pathological processes caused by the growing tumor tissue, as well as due to the release of nociceptive mediators. Important are also changes associated with the progression of the disease, cachexia, the formation of pressure sores and local inflammatory states - inter alia, the oral. Very rarely, pain occurs as pure nociceptive, receptor, somatic, visceral or neuropathic pain syndrome. Most often it is a complex phenomenon - the consequence of many different mechanisms; among others ischemic, inflammatory, neuropathic. Identification of the above factors is extremely important due to therapeutic implications and the possibility of using targeted, effective treatment. [11,12]

## **Groups of drugs used in treatment of pain**

The basic method of treating pain in patients with cancer is pharmacotherapy.

The World Health Organization (WHO) has determined the qualification of painkillers by placing them on the steps of the analgesic ladder.

The following rules apply in this procedure: [13,14,15]

1. individual selection of the drug and its dose
2. maintaining the analgesic concentration of the drug in the blood serum (constant analgesic effect consists in administering the next doses of drugs at regular intervals, depending on its pharmacokinetics and pharmacodynamics, drug administration should overtake the occurrence of pain, the mistake is administering the drug only in the event of pain)
3. in the case of ineffective therapy it is necessary to change the drug in accordance with the principles of the WHO analgesic ladder
4. pharmacotherapy of pain is supplemented with koanalgetics
5. oral route is the preferred route of pharmacotherapy
6. it is necessary to monitor the treatment

The NRS (Numerical Rating Scale) scale in which 0 means no pain and 10 pain is the standard tool to assess the effectiveness of treatment and pain intensity.

An analgesic procedure is considered effective if the NRS is below 3. [16,17]

### **The first stage of analgesic ladder - non-opioid analgesics**

In patients with diagnosed cancer, non-opioid analgesics are recommended if pain intensity is below or even 4 on the NRS scale. The above-mentioned drugs can be used both in monotherapy and in polytherapy, which enables a wider spectrum of analgesic action of other drugs. Non-steroidal anti-inflammatory drugs can be associated with both paracetamol and metamizole. Due to the lack of anti-inflammatory effects, paracetamol is less effective in nociceptive pain with an inflammatory component. It should also not be used in visceral pain, while metamizole also has a spazolytic effect, which gives it an advantage in the treatment of colic pain.

During the selection of NSAID therapy, the latency period, the duration of the analgesic effect, the effective dose, contraindications and risk of complications, occurrence of renal and hepatic failure, potential interactions with other drugs and individual patient preferences should be taken into account. [7,9,10]

The maximum daily doses are: for metamizol up to 5 grams daily, for paracetamol, the daily dose of 4 mg per day should not be exceeded; ketoprofen up to 200 mg, Ibuprofen up to 2400 mg, naproxen up to 1000 mg. The non-opioid analgesic of the first choice recommended by the team of experts is paracetamol; in acute, colic pain- metamizole.

### **The second level of analgesic ladder - weak opioids**

In patients with moderate pain (pain intensity NRS-4-6), and in patients in whom non-opioid drugs are ineffective, it is recommended to use opioids such as tramadol, codeine, and dihydrocodeine. In the second stage of the WHO analgesic ladder, it also recommends the use of low doses of opioids from the third stage of the analgesic ladder by oral route; that is, morphine up to 30 mg per day, oxycodone up to 20 mg per day, hydromorphone up to 4 mg per day.

### **The third level of the analgesic ladder - strong opioids.**

Used to treat strong and very strong pain. The drugs from the third level of the WHO analgesic ladder include: morphine, oxycodone, naloxone, buprenorphine, fentanyl, methadone and tapentadol. According to the guidelines of the European Association for Palliative Care (EAPC) and the European Society for Medical Oncology (ESMO), morphine, oxycodone and hydromorphone are first-line opioids in the treatment of moderate to severe pain. [13, 15, 25] The scheme of the world health organization also includes the use of adjuvant medicines - that is, supplementary drugs. They should be given to treat certain types of pain as drugs that increase the effect of analgesics or to combat side effects. They are also used as medicines to combat the side effects of basic treatment. Pains requiring complementary treatment are mainly neuropathic pain, pain associated with intracranial tightness, intestinal obstruction, infections or constipation. Antiemetics and laxatives are used as side effects treatment; on the other hand, symptoms that increase the pain are, among others, insomnia and depression. This group of drugs includes glucocorticoids, antidepressants and antiepileptics, alpha2-adrenergic antagonists, dexmedetomidines, and neuroleptics.

### **Opioidofobia**

The use of opioid drugs raises more concerns than the use of NSAIDs, but the effectiveness of the treatment is much higher with the use of opioids. It is also associated with higher satisfaction of patients treated for chronic pain. Concerns about taking opioid medicines are mainly associated with side effects or addiction. There are also concerns about damage to the stomach or drug resistance. This is mainly due to the lack of information on the proper treatment of pain. It is very important that the doctor, when switching on the opioid medicines, devotes the right time to the patient for an interview and to present the proposed treatment in detail. [18,19]

Opioid drugs used according to the appropriate regimens dosage and observation of the effectiveness of treatment of possible adverse reactions are safe drugs. Very rarely, they cause severe drug reactions. In the case of properly conducted analgesic therapy, situations of abuse or addiction to opioids are very rarely observed. [20]

### **Interdisciplinary pain treatment in cancer disease as a challenge**

In Europe very often there is insufficient care for patients with cancer pain [21]. Insufficient knowledge of health professionals, lack of pain management strategies, insufficient pain management policy, limitations in access to opioids and fear of their use are the main reasons for inadequate pain management.

Few governments have created opioid drug delivery systems, there is still no policy to treat pain, and some countries overly tighten the rules on the control of writing opioids, which in turn hampers access to opioid preparations and proper treatment.

It should be strived to ensure that proper pain management is an element of the overall process of treating cancer. Extension of access to appropriate care would allow a significant improvement in the quality of life of patients. The education of health care professionals, both

at the university level and the promotion of pain management through the training of doctors of various specialties plays a huge role.

European pain relief societies recommend the creation of interdisciplinary pain treatment centers. Specialized centers should have access to diagnostic imaging, all therapeutic methods and invasive analgesic methods. In addition, it is necessary to work with specialists in the field of clinical psychology and physiotherapy. [22,23,24]

Increasing the financial outlay for multidisciplinary pain relief and rehabilitation may reduce the indirect costs associated with chronic pain, i.e. related to the loss of productivity and the care of a sick-pain patient.

According to the WHO, 5.5 million terminal cancer patients suffer from inadequate analgesic treatment in countries with limited access or without access to controlled analgesics. [2]

It should be emphasized that access to pain treatment is one of human rights. Increasing the scope of services and developing pain relief should be a priority of current health strategies in European countries.

**“Please, do not make us suffer any more...” [3]**

## **Bibliography**

1. International Association for the Study of Pain and delegates of International Pain Summit 2010. Declaration that Access to Pain Management Is a Fundamental Human Right, 2010 ([http://www.iaspain.org/AM/Template.cfm?Section=Press\\_Information1&Template=/CM/ContentDisplay.cfm&ContentID=11728](http://www.iaspain.org/AM/Template.cfm?Section=Press_Information1&Template=/CM/ContentDisplay.cfm&ContentID=11728)) [Accessed 22 August 2011].
2. World Health Organization. Ensuring balance in national policies on controlled substances: guidance for availability and accessibility of controlled medicines. WHO, 2011 ([http://www.who.int/medicines/areas/quality\\_safety/GLs\\_Ens\\_Balance\\_NOCP\\_Col\\_EN\\_sanend.pdf](http://www.who.int/medicines/areas/quality_safety/GLs_Ens_Balance_NOCP_Col_EN_sanend.pdf)) [Accessed 22 August 2011].
3. Human Rights Watch. “Please, do not make us suffer any more...” Pain Treatment, Palliative Care and Human Rights. Human Rights Watch, 2009 ([http://www.hrw.org/sites/default/files/reports/health0309web\\_1.pdf](http://www.hrw.org/sites/default/files/reports/health0309web_1.pdf)) [Accessed 22 August 2011].
4. Human Rights Watch. Global state of pain treatment. Access to palliative care as a human right. Human Rights Watch, 2011 (<http://www.hrw.org/sites/default/files/reports/hhr0511W.pdf>) [Accessed 22 August 2011].
5. International Federation of Health and Human Rights Organisations. Denial of essential pain relief. IFHHRO, 2010 (<http://ifhhro.org/news-a-events/campaign-news/12-denial-of-essentialpain-relief>) [Accessed 22 August 2011].
6. Hilgier M., Jarosz J., Leczenie bólu nowotworowego. Przewodnik lekarza, Dodatek specjalny, Onkologia 2000

7. Wordliczek J, Kotlińska-Lemieszek A, Leppert W et al. Farmakoterapia bólu u chorych na nowotwory- zalecenia Polskiego Towarzystwa Badania Bólu, Polskiego Towarzystwa Medycyny Paliatywnej, Polskiego Towarzystwa Onkologicznego, Polskiego Towarzystwa Medycyny Rodzinnej, Polskiego Towarzystwa Anestezjologii i Intensywnej Terapii. *Ból* 2017; 18: 11-53.
8. Worodliczek J., Dobrogowski J., *Ból ostry*, Seria Wydawnictwa Medycznego Centrum Kształcenia Podyplomowego UJ, Kraków 2002
9. Dobrogowski J., Wordliczek J., Woron J., (red.): *Farmakoterapia bólu*, Termedia, Poznań 2014
10. Malec-Milewska M., Woron J. (red.) : *Kompendium leczenia bólu*. Medical Education, Warszawa 2017
11. Leppert W., Zajączkowska R., Wordliczek J., Dobrogowski J., Woron J., Krzakowski M., Pathophysiology and clinical characteristics of pain in most common locations i cancer patients, *J Physiol Pharmacol*, 2016; 67: 787-799
12. Wordliczek J., Zajączkowska R.: *Pain mechanisms in cancer patients*, w: Hanna M. et al. (eds.): *Cancer Pain*. Nowy Jork, Springer 2013: 47-70
13. Caraceni A., Hanks G., Kassa S. et al. : Use of opioid analgesics in the treatment of cancer pain: evidence-based recommendations from the EAPC, *Lancet Oncol*, 2012; 13: 58-68
14. NCCN Clinical practice Guideline in oncology, *Adult Cancer Pain*. Version 2, 2017
15. Ripamonti C. I. , Santini D., Maranzano E., Berti M., Roila F.: *Management of cancer pain: ESMO Clinical Practice Guidelines*, *Ann Oncol*, 2012,23, (Suppl 7): 139-154.
16. Breivik H., Borchgrevink P.C., Allen S.M., Rosseland L.A., Romundstad L., Hals E.K., Kvarstein G., Stubhaug A.: *Assesment of pain*, *Br J Anaesth*, 2008,101, 17-24.
17. Nicholas M.K., Asghari A., Blyth F.M.: *What do the numbers mean? Normative data in chronic pain measures*, *Pain*, 2008; 134: 158-173
18. Graczyk M, Krajnik M. *Opioidofobia lekarzy i chorych jako przeszkoda w skutecznym leczeniu bólu u chorego na nowotwór*. W: *Chory na nowotwór- kompendium leczenia bólu* . Red. M.Malec-Milewska, M. Krajnik, J. Wordliczek. Medical Education Sp. z o.o., 2013.
19. Bender J. L., Hohenadel J., Wong J. et al.: *What patients with caner want to know about pain: a qualitative study*, *J Pain Symptom Manage*, 2008; 35 (2): 177-187
20. The International Narcotics Control Board(INCB). 2004 Annual Report, Press Release No. 6. *Use of essential narcotic drugs to treat pain is indequate, especially in developing countries* March 3 2004
21. Deandrea S, et al. *Prevalence of undertreatment in cancer pain. A review of published literature*. *Ann Oncol* 2008;19:1985-91.
22. British Pain Society. *Cancer pain management: A perspective from the British Pain Society, supported by the Association for Palliative Medicine and the Royal College of General Practitioners*. London; British Pain Society, 2010 ([http://www.britishpainsociety.org/book\\_cancer\\_pain.pdf](http://www.britishpainsociety.org/book_cancer_pain.pdf))[Accessed 6 September 2011].
23. Hüppe M, et al. [Success of treatment in higher stages of pain chronification as well? An evaluation of the Mainz pain staging system based on the QUAST-analysis sample]. (Article in German) *Schmerz* 2011;25:77-88.

24. Carlson CL. Effectiveness of the World Health Organization cancer pain relief guidelines: an integrative review. *J Pain Res* 2016; 9: 515-534
25. Corli O., Floriani I., Roberto A., Montanari M, Galli F., Greco M. T., Caraceni A., Kaas A s., Dragani T.A., Azzarello G., Luzzani M., Cavanna L., Bandieri E., Gamucci T., Lipari G., Di Gregorio R., Valenti D., Reale C., Pavesi L., Iorno V., Crispino C., Pacchioni M., Apolone G., CERP Study of Pain Group; Are strong opioids equally effective and safe in the treatment of chronic cancer pain? A multicenter randomized phase IV, real life' trial on the variability of response to opioids, *Ann Oncol*, 2016;27,1107-1115