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CLINICAL FOCUS: SNAPSHOT IN PAIN MANAGEMENT
EDITORIAL

Interventional pain management in cancer patients

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Interventional pain management has developed greatly in the last 20 years. Great advances have occurred in this field. Since the 80s decade, when the World Health Organization (WHO) analgesic ladder was published, it provided a simple model of multimodal analgesia with a slow introduction and upward titration of opioids according to the intensity of pain [1,2].

Although the use of opioids for cancer pain remains a mainstay in accordance with the World Health Organization's analgesic ladder, this approach does not produce adequate pain control in an estimated 20% to 30% of patients. Therefore, interventional pain treatment is an important 'fourth step' for cancer pain control in this percentage of patients and for survivors. Another indication for interventional pain treatment is patients cannot tolerate pharmacologic titration to therapeutic levels or because inadequate analgesia is achieved despite maximum doses of these agents. Opioids are not innocuous and some common side effects of opioids are sedation, nausea, respiratory depression, and constipation [3].

However, there is developing evidence [4–6] indicating that blocks done earlier in the WHO ladder are beneficial. Especially, when sympathetic blocks are performed when patients refer mild to moderate pain secondary to abdominal and pelvic cancer versus when they refer severe pain. It has been observed that earlier treatment groups present better outcomes and a greater number of block responders, significantly decreasing opioid consumption, and improve quality of life.

There are several techniques for pain control. Among the options, cancer patients have are sympathetic neurolytic blocks for those patients with a visceral pain component, vertebroplasty, kyphoplasty, osteoplasties for bone pain, peripheral nerve blocks, implantable devices as intrathecal therapy for both somatic and neuropathic pain components, as well as peripheral and spinal cord stimulation; for refractory interventional cancer pain cordotomy.

Neurolytic blocks of sympathetic pathways at different levels have been used for years. Celiac axis is the only sympathetic structure that can be blocked through two different approaches: celiac plexus block (CPB) and splanchnic block (SB). Both have been used for the treatment of cancer pain originating from upper abdominal viscera while superior hypogastric plexus block (SHPB) has been used for pelvic visceral pain treatment [7]. According to a review in 2015, there is high-quality evidence of the analgesic efficacy of CPB in patients with pancreatic cancer pain. Data regarding SHPB are limited, also considering that a pure visceral mechanism is less likely to be found in a pelvic pain syndrome in comparison with pancreatic cancer.

A recent revision demonstrated in 180 patients a success rate of 59.4% at 1 month and 55.5% at 3 months and 48.8% at 6 months. A sustained and significant reduction in pain intensity at 3 months as well as a reduction in opioid consumption of 12.55% [8].

The injection of local anesthetic or other analgesic agents near a peripheral nerve. Interruption of nociceptive transmission produces strong analgesia lasting beyond the duration of the action of the drug.

Intercostal nerves emerge from the anterior rami of T1 to T11 thoracic spinal nerves. Intercostal neurolysis is indicated in metastatic disease involving the ribs and/or the chest wall. This block can be approached under ultrasound and/or fluoroscopy guidance, though ultrasound can be preferred as the safest (providing the benefits of visualizing the pleura and the needle in real time) and reduces exposure to ionizing radiation.

Radiofrequency ablation is the most studied modality of image-guided tumor ablation and has been shown to be efficacious.

The injection of bone cement and augmentation in vertebral bodies and in structures beyond the spine like in long bones (eg. Femoroplasty is good option especially in patients with osteolytic disease, functional pain, and multiple myeloma). They reduce their opioid consumption and according to their daily activities performance [9,10]. However, further randomized control trials (RCTs) of bone augmentation in patients with cancer-related pain are required to improve the strength of evidence available to recommend these procedures on a large scale [11].

The intrathecal route of analgesics delivery leads to decreased opioid consumption: if the opioid is delivered via the oral and epidural route, the doses are 300 and 24 times higher, respectively, than the same intrathecal dose. The lower doses required usually lead to fewer systemic side effects and better analgesia. According to ESMO guidelines, intraspinal techniques delivered and monitored by a skilled team should be included as part of the cancer pain management strategy [12]. It could be especially useful in patients with inadequate pain relief despite systemic opioid escalating doses and

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appropriate adjuvant analgesia; non-effective response to switching the opioid or the route of administration, as well as when side effects increase because of dose escalation. Usually, a problem is life expectancy; however, intrathecal pumps can be implanted after a trial in patients with >6 months of life expectancy, if not, epidural catheter with local anesthetic and opioid can be an option in a palliative care setting [13]. Another option in a palliative care settings, which was used in the past is to consider subarachnoid neurolysis in cancer patients that have life expectancies up to 1 year; with unilateral pain (predominantly somatic), of two up to six dermatomes. For applying a neurolytic agent (phenol in thoracic dermatomes) in the spine, the patient should be selected carefully and well informed of possible side effects [14].

In cervical cordotomy, a permanent lesion is created in the lateral spinothalamic tract in the anterolateral spinal cord. Cordotomy might be an option in the palliative care setting. According to a randomized trial that enrolled 16 patients. Six of seven patients (85.7%) randomized to cordotomy experienced >33% pain reduction 1 week after cordotomy [15].

One question in cancer-related pain that should be studied in the future is if early interventional pain management should be offered even for mild pain in order to improve patient comfort and function. Also, opioid-induced immunosuppression is a relatively new concern in cancer patients, since immunosuppressive properties have been observed in preclinical studies and in human volunteers [16,17].

Declaration of interest

The contents of the paper and the opinions expressed within are those of the authors, and it was the decision of the authors to submit the manuscript for publication.

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References

1. World Health Organization. 1996. Cancer pain relief: with a guide to opioid availability. 2nd ed. WHO Library Cataloguing in Publication Data.
2. Sindt J, Brogan S. Interventional treatments of cancer pain anesthesiology clin. Anesthesiol Clin. 2016;34:317–339.
3. Swarm R, Abernethy A, Anghelescu D. Adult cancer pain. J Natl Compr Canc Netw. 2013;11(8):992–1022.
4. Zhong W, Yu Z, Zeng JX, et al. Celiac plexus block for treatment of pain associated with pancreatic cancer: a meta-analysis. Pain Pract. 2014;14(1):43–51.
5. Amr YM, Makharita MY. Neurolytic sympathectomy in the management of cancer pain-time effect: a prospective, randomized multicenter study. J Pain Symptom Manage. 2014;48(5):944–956 e942.
6. Wong GY, Schroeder DR, Carns PE, et al. Effect of neurolytic celiac plexus block on pain relief, quality of life, and survival in patients with unresectable pancreatic cancer: a randomized controlled trial. JAMA. 2004;291(9):1092–1099.
7. Mercadante S, Klepstad P, Kurita G, et al. Sympathetic blocks for visceral cancer pain management: a systematic review and EAPC recommendation. Crit Rev Oncol Hematol. 2015;96(3):577–583.
8. Rocha A, Hernández-Porras RR, Plancarte R, et al. Effectiveness of superior hypogastric plexus neurolysis for pelvic cancer pain. Pain Physician. 2020;23(2):203-208.
9. Plancarte R, Guajardo J, Meneses A, et al. Clinical benefits of femoroplasty: a novel technique. Pain Physician 2014; 17:227-234.
10. Cazzato R, Palussière J, Buy X, et al. Percutaneous long bone cementoplasty for palliation of malignant lesions of the limbs: a systematic review. Cardiovasc Intervent Radiol. 2015;38 (6):1563–1572.
11. Kurita GP, Sjogren P, Klepstad P. Interventional techniques to management of cancer-related pain: clinical and critical aspects. Cancers (Basel). 2019;443(11):1–12.
12. Fallon M, Giusti R, Aielli F. Management of cancer pain in adult patients: ESMO clinical practice guidelines. Ann Oncol. 2018;4(29): iv166–iv191.
13. Vayne-Bossert P, Afsharimani B, Good P, et al. Interventional options for the management of refractory cancer pain—what is the evidence? Support Care Cancer. 2016;24(3):1429-1438.
14. Plancarte SR, Guajardo J, Guillén R. Neurolytic techniques for cancer pain management, Oscar de Leon Casasola. Cancer pain pharmacological, interventional and palliative care approaches. Philadelphia, USA: Saunders Elsevier; 2006. p. 501–507.
15. Viswanathan A, Vedantam A, Hess K, et al. Minimally invasive cordotomy for refractory cancer pain: a randomized controlled trial. Oncologist. 2019;24(7):e590–e596.
16. Maher D, Walia D, Heller N. Suppression of human natural killer cells by different classes of opioids. Anesth Analg. 2019;128 (5):1013–1021.
17. Franchi S, Moschetti G, Amodeo G, et al. Do all opioid drugs share the same immunomodulatory properties? A review from animal and human studies. Front Immunol. 2019;1(10):11.