A three-dimensional analgesic strategy to optimize multimorphic cancer pain management

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ABSTRACT

Cancer pain is now the subject of many recently updated scientific guidelines. These guidelines sweep aside treatment strategies – whether drug-based, interventional, or complementary – and the treatment models to be implemented through ambitious health policies, particularly regarding supportive cancer care. Pain, because of its multimorphic nature and ability to change throughout the entire care pathway, is present during treatment, in palliative situations, or in cancer survivors. Nevertheless, despite this framework of understanding for better management, multimorphic cancer pain remains a major public health issue, one that will only get worse in the future as the incidence of cancer increases around the world.

The COVID crisis has provided us with many lessons that we should use as inspiration for optimizing management of cancer pain. The permanent interactions and synergies between patients, healthcare professionals, and the health system can make it possible to define the optimal analgesic balance. This can be achieved through three means: understanding the various aspects of multimorphism in cancer pain, managing this multimorphism, and systemically organizing the supportive care pathway. We propose a three-dimensional analgesic strategy to optimize multimorphic cancer pain management, including the latest scientific data available. Cancer pain optimal management remains priority for optimizing the quality of life of the patients.

Introduction

While the incidence of cancer increases constantly, the figures for cancer pain do not improve. Despite considerable scientific and therapeutic progress, this has been the case for several decades. According to the World Health Organization, "In 2018, there were an estimated 18 million new cases of cancer and 10 million deaths from cancer worldwide. The predicted global burden will double to about 29–37 million new cancer cases by 2040, with the greatest increases in low- and middle-income countries". Given what we know about the prevalence of cancer pain, regardless of the stage of the disease as well as its presence in cancer survivors, we are thus going to be faced with a real challenge in terms of public health, particularly as the inequalities between countries are already considerable. All our articles on the subject deplore these figures and use them as the starting point for a problem of scale that we would like to resolve - once and for all -, in our role as healthcare professionals managing cancer pain, an issue that is still widely underestimated and undertreated, including in palliative situations. Although many scientific articles focus on proposing increasingly detailed and exhaustive models for understanding multimorphic cancer pain and trying to improve the situation that our cancer patients experience, there is still a gap between theory and real life, between scientific knowledge and its application in the field.

Cancer pain has changed: multimorphism at the heart of the global analgesic strategy

By nature, pain may be present at all stages of the disease, and event after cancer treatments. WHO recently modelled three types of care to classify the pathway for cancer patients: "Supportive, survivorship and palliative care should be integrated into broader health services, with clear communication among different levels of care to improve overall outcomes and efficiency".

In parallel with this progress, cancer pain has also changed and become more complex: in a series of articles, we described the concept of multimorphic cancer pain. "From an etymological point of view, the term multimorphic refers to the possibility of adopting several forms at the same time and of changing form. This term seems to us to be adapted to the dynamic definition that we have sought to give to cancer pain: this type of pain can effectively evolve in how it presents, in relation to the different factors, whether or not they are linked to cancer and its management. In short, cancer pain is not a fixed entity in itself or over time. It changes, alters, evolves, or devolves, presenting in different forms at any time, from the diagnosis until after the cure or in palliative situations when applicable. These modifications depend on a series of intrinsic or extrinsic factors generally associated with each other, which play a part in initiating an imbalance at the level of pain management and thus create disruptions".

Disruptions	Criteria defining the multimorphic nature of cancer pain		
Factors influencing the complexity of cancer pain	Components of the pain: ▪ Nociceptive (includes inflammatory) ▪ Neuropathic ▪ Nociplastic*	Aetiopathogenic mechanisms: ▪ The cancer in itself ▪ Its treatments (chemotherapies, targeted therapies, immunotherapies, hormone therapy, radiotherapy, surgery) ▪ Other causes of pain	Presentation of the pain: ▪ Intensity ▪ Duration of the pain (chronic, subacute, acute) ▪ Background ▪ Exacerbations/breakthrough pain ▪ Pain emergencies
Intrinsic factors of variability over time concerning the cancer	Type of cancer and its stage on diagnosis	Progression of the disease including "chronic illness" cancer: ▪ Cure ▪ Sequelae ▪ Relapse ▪ Metastases ▪ Palliative progression	Evolution in the treatments and complications: ▪ Cancer treatments ▪ Supportive treatments ▪ Complications
Extrinsic factors of variability over time concerning the state of health	Environmental factors: ▪ Ethno-demographic factors/cultural and spiritual factors ▪ Socio-economic/earliness/level of access to care/abandonment factors ▪ Communication	Inter-individual factors: ▪ Genetics ▪ Variability factors of pain thresholds ▪ Immunity ▪ Metabolism	Intra-individual factors: ▪ Motivation ▪ Risk factors ▪ Comorbidities/multi-morbidities ▪ Intercurrent treatments ▪ Treatment compliance ▪ Treatment education

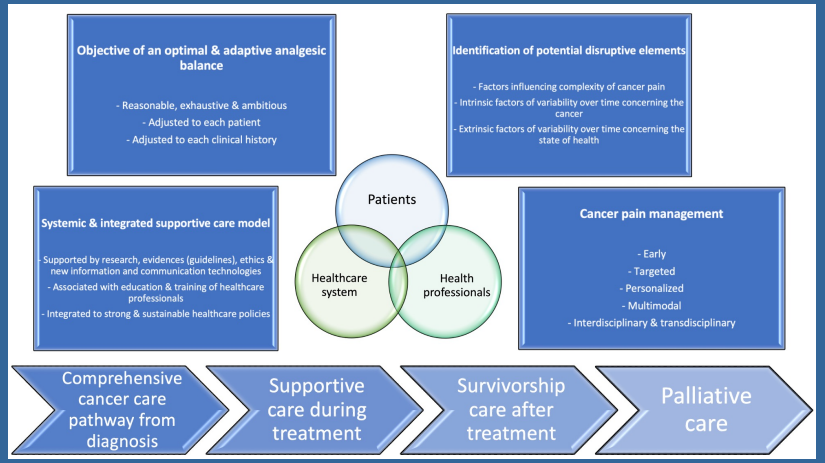
*The concept of nociplastic pain could be useful to explain complex syndromes in particular after cancer treatments, or when no link with the disease and its treatments is obvious: pain that (1) arises from altered nociception despite no (2) clear evidence of actual or threatened tissue damage causing the activation of peripheral nociceptors or (3) evidence for disease or lesion of the somatosensory system causing the pain (IASP Taxonomy 2017)

A three-dimensional analgesic strategy to optimize multimorphic cancer pain management

First dimension
An analgesic objective and three recommendations: prerequisites for managing cancer pain, identification of the elements that disrupt analgesic balance, and an integrated, systemic model for supportive care in which these three dimensions must be found

Second dimension
The care pathway starting from the cancer diagnosis, including the three types of care in comprehensive cancer care (supportive, survivorship and palliative care)

Third dimension
The key players involved, whose synergy and even interdependence will condition the success of the analgesic project. Patients are obviously the first key players (and experts in their own health), in association with healthcare professionals and the health system in which they find themselves, in the broadest sense of the term.



CONCLUSION

The aim of the multidimensional approach that we adopt today regarding multimorphic cancer pain is to be exhaustive, through the continuum formed by the comprehensive cancer care pathway. Managing cancer pain as the cornerstone of supportive medicine can now be based on a solid modelled foundation to be implemented as much as possible in the field with our patients and healthcare providers.

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