

# Control of pain and dyspnea in patients with oncologic disease in acute care: non-pharmacological interventions

## Abstract

**Objective:** To identify non-pharmacological strategies in the control of pain and dyspnea in patient with oncological disease in acute care.

**Methodology:** Question in PI[C]O format was used and search at EBSCO (MEDLINE with Full TEXT, CINAHL, Plus with Full Text, British Nursing Index) retrospectively from 2009 to 2015. We included also guidelines by reference entities Oncology Nursing Society (2011) National Comprehensive Cancer Network (2011, 2014) and Cancer Care Ontario (2010) resulting in a total of 15 articles.

**Results:** The gold standard to an adequate symptom control is a systematized assessment. Non-pharmacological measures psycho-emotional support, hypnosis, counseling, training, instruction, therapeutic adherence, music therapy, massage, relaxation techniques, telephone support, functional and respiratory re-education increase health gains.

**Conclusion:** The control of oncologic pain and dyspnea require a comprehensive and multimodal approach.

**Keywords:** oncologic pain, dyspnea, nursing interventions, acute care

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## Introduction

Globally more than 14 million new cases of cancer will occur each year and the number of people with this disease expected to triple by 2030 as a result of survival.<sup>1,2</sup> Survivors continue to experience significant limitations compared to those without a history of cancer.<sup>3</sup> The presence of symptoms persists permanently resulting from the direct adverse effects of cancer, treatment, exacerbation and onset of new ones associated with recurrence or second tumor.<sup>4,5</sup>

Pain, dyspnea, fatigue, emotional distress arises simultaneously and is interdependent. In this way the term cluster symptoms comes to light when two or more symptoms are interrelated since they can share the same etiology and produce a cumulative effect on the person's functioning.<sup>6</sup> Richards et al.<sup>7</sup> found that patients with a high prevalence of pain were more likely to be treated with high-dose pain relief than those who did not. The incidence of pain at the onset of the disease pathway is estimated at 50% and is increased to approximately 75% at advanced stages which means that the survivor does not experience it only as an immediate treatment outcome.<sup>6</sup> In an advanced stage of the oncological disease dyspnea is one of the symptoms that assumes particular relevance often arises associated with pain (about 45%) represented a cluster symptoms inducer of greater anxiety and fatigue. That is responsible for the demand for health care so it is fundamental a serious investment in their control.<sup>8</sup>

The objective of this systematic review of the literature is to identify non-pharmacological strategies in the control of pain and dyspnea of the patients with oncological disease in acute care.

## Research strategy

Was formulated a question in PI[C]O format: What are the non-pharmacological strategies (Intervention) for the control of pain and dyspnea (Outcomes) in the patients with oncology (Population) in acute care (Setting)? The electronic database used was based on EBSCO (MEDLINE with Full TEXT, CINAHL, Plus with Full Text, British Nursing Index) and descriptors were searched in the following order (guideline or evidence based practice or randomized controlled trial) and (symptoms control or dyspnea or tachypnea or Cheyne stokes respiration or respiratory symptoms or chronic pain or cancer pain or (oncology nursing or emergency care or palliative care). The descriptors were searched retrospectively from 2009 until 2015, resulting in a total of 12 articles. Inclusion criteria include the guidelines emitted by reference entities in the<sup>9,10</sup> and Cancer Care Ontario (2010). Exclusion criteria included all articles with unclear methodology repeated in both databases (N=3) aged less than 18 years and with a date prior to 2009. In total a total of 15 articles. As show the Figure 1. To assure its applicability in the clinical context only levels of evidence considered of high quality that is up to 2a like shows the Table 1 were acceptable.

**Table 1** Levels of evidence adapted from.<sup>11</sup> Guidelines on prostate cancer. Netherlands: European association of urology

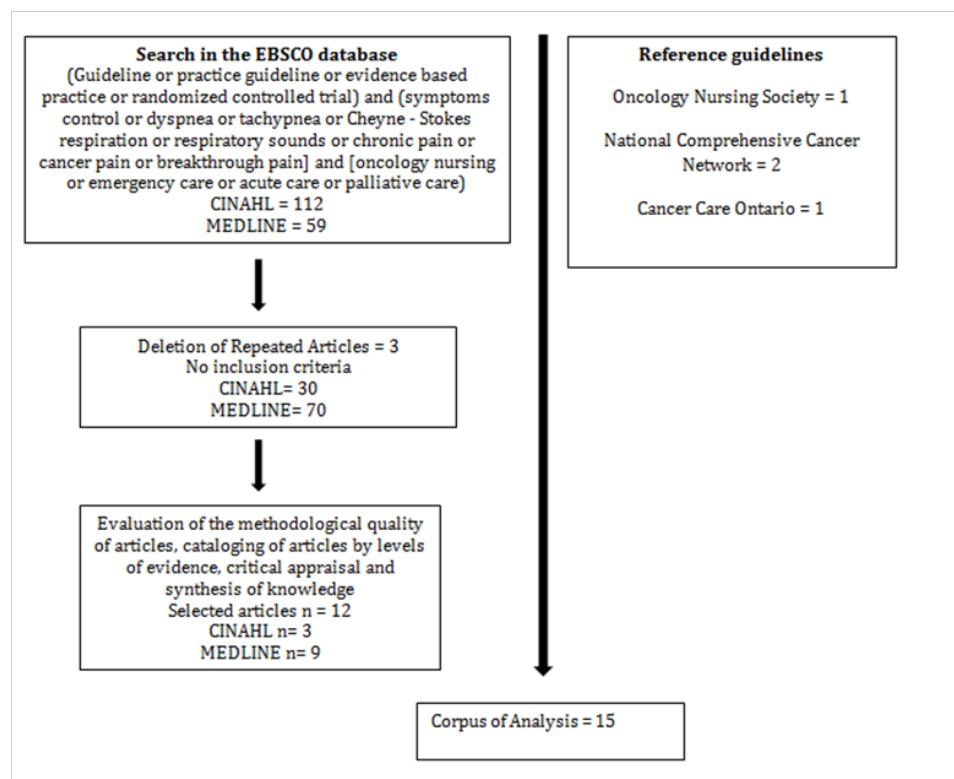
Level	Type of evidence
1 <sup>a</sup>	High quality evidence obtained from meta-analyses, systematic reviews of randomized controlled trials (RCTs)
1b	Evidence obtained from at least one RCT
2 <sup>a</sup>	Evidence obtained from high-quality or cohort case-control studies, with a very low risk of bias and a high probability of causal relationship
2b	Evidence obtained from at least one other type of well-designed quasi-experimental study
3	Evidence obtained from well-designed non-experimental studies, such as case studies or case series
4	Evidence obtained from the opinion of experts or recognized identities / reputable authorities

## Results

	Wong-Baker Faces Scale
	Numbers Evaluation Scale
Using self-assessment tools <sup>11,12</sup>	Qualitative Scale
	Edmonton Symptom Assessment Scale
	Summary of Pain Inventory
	Assessment of Pain in Advanced Dementia
Using hetero-evaluation tools <sup>11,12</sup>	Observer Scale
	Scale Behavioral Pain Scale
	Intensity
	Frequency
	Type of pain (somatic, visceral, neuropathic or mixed)
	Location and/or presence of irradiation
Evaluate the characteristics of oncologic pain <sup>5,6,11-16</sup>	Duration of pain and pattern of pain (continuous/end of dose/irruptive)
Assessment of oncological pain	Relieving and exacerbating factors
	Response to current and rescue analgesic regimen
	Existence of other associated symptoms
	Interference in daily living activities
	Degree of concern with the disease
	Degree of anxiety
Evaluate psycho-emotional state <sup>11,12</sup>	Previous diagnosis of depression and/or personality disorders
	Presence of suicidal ideation
	Presence of spiritual concerns
	To ascertain the existence of other comorbidities and/or additive behaviors <sup>11,12</sup>
	To verify the performance of previous or current oncological treatments <sup>11,12</sup>
	To perform a comprehensive analysis of the etiology of oncologic pain with analytical and imaginary findings <sup>12</sup>

Table Continued

<b>Results</b>	
	Individualization of nursing care <sup>8,14,17-19</sup>
	Inclusion of the significant person in the therapeutic plan <sup>8,12,14,17</sup>
	Psycho-emotional support <sup>19</sup>
	Counseling/education for health self-management/health literacy <sup>6,11,12,17,19</sup>
Non-pharmacological treatment of cancer pain	Phone follow-up <sup>11</sup>
	Telephone assistance <sup>11</sup>
	Newsletter, with analgesic scheme included <sup>11</sup>
	Relaxing techniques and guided image <sup>11</sup>
	Transcutaneous Electrical Stimulation <sup>11</sup>
	Therapeutic Massage, Heat/Hot Application <sup>11</sup>
	Music Therapy <sup>19</sup>
	Nurse as case manager in therapeutic adherence <sup>11,19</sup>
	Onset: Beginning, frequency and duration
	Provoking/Palliating: factors of relief and exacerbation
	Quality description
	Use the acronym O, P, Q, R, S, T, U e V10
	Region/Radiation: association with other symptoms
	Severity: intensity
	Treatment: therapeutic regimen, efficacy and adverse effects
	Understanding: Understanding the etiology attributed
	Values: objective in control of dyspnea
	Evaluate the psycho-emotional state <sup>1</sup>
Appreciation of dyspnea	To evaluate the existence of other comorbidities <sup>1</sup>
	Using assessment tools that include dyspnea: Edmonton Symptom Assessment Scale, Clinical Anxiety and Depression Scale - HADS, Modified Dyspnea Index (MDI) <sup>1</sup>
	Screening of the subtreated causes of dyspnea, requiring pericardiocentesis, pleurodesis, thoracentesis, bronchoscopy, transfusion support or antibiotic therapy <sup>20</sup>
Non-pharmacological strategies	Control and Dissociation of Respiratory Times <sup>1,8</sup>
	Effective assisted cough training <sup>1,8</sup>
	Positioning to reduce respiratory work <sup>1,8</sup>
	Application of facial cold to stimulate the trigeminal nerve <sup>1,21</sup>
	Consider the need to adopt healthy lifestyles <sup>8</sup>
	Psycho-emotional support <sup>1,8,20</sup>
	Management of anxiety of the person/caregiver/family, with exploration of the meaning of dyspnea for the person, illness and life expectancy <sup>1,8,20</sup>
	Relaxing and visualization exercises <sup>1,8,20,21</sup>
	Consider adjustment of nutritional and water habits <sup>8</sup>
	Education for self-management of the therapeutic regimen <sup>8</sup>
	Referral to other health services/professionals: pain unit, functional and respiratory rehabilitation, palliative care, mental and psychiatric health <sup>1,8,21</sup>



**Figure 1** Research and selection process of articles, from 2009 to 2015.

## Discussion

The assessment of pain is considered the first step towards effective pain control which includes self-assessment tools that enable a more measurable dimension where the person's speech is the gold standard in data collection. The characteristics of pain are influenced by the psycho-emotional state the activities of daily living the existence of other comorbidities and additive behaviors. The performance of previous or current oncological treatments, analytical and imaging data was related to the etiology of pain. This aspect is considered fundamental in a comprehensive analysis of the person with cancer pain.<sup>10,22-24</sup> The non-pharmacological strategies are the person-centered care, which emphasizes the individualization and inclusion of a significant person that increases health outcomes. Directed interventions for counseling, education for self-management, training/instruction, telephone follow-up, health literacy and nurses as case manager with interconnection with other health professionals and health services increase therapeutic adherence and satisfaction with care.<sup>10,19,22,24-26</sup> Therapeutic massage, hot and cold application, positioning, hypnosis, transcutaneous electrical nerve stimulation and music therapy are considered measures that improve the affectivity of medication regimen.<sup>10,26</sup>

In the evaluation of dyspnea the literature suggests the use of the acronym O, P, Q, R, S, T, U and V to better evaluate its characteristics (onset) frequency, provoking factors of relief and exacerbation, (Quality) description of the dyspnea sensation, (region/ radiation) the existence of other symptoms simultaneously, (severity) intensity of dyspnea, (Treatment) medication used for its control, efficacy and adverse effects, (Understanding) dyspnea on human living, (Values)

the level of acceptable/desirable dyspnea intensity for the person.<sup>27</sup> The instruments to be included in its assessment are the Edmonton System Assessment Scale, Clinical Anxiety and Depression Scale-HADS, Modified Dyspnea Index (MDI) and Numerical Rating Scale (NRS) for breathlessness, Modified Borg and Chronic Respiratory Questionnaire.<sup>27</sup> The etiology of dyspnea should be carefully investigated to determine the need of other complementary techniques for its relief.<sup>10</sup>

Non-pharmacological strategies aimed at functional and respiratory rehabilitation, cold application, adoption of healthy lifestyles, education for self-management/counseling, psycho-emotional support and relaxation/ visualization exercises in anxiety control and referral to others health professionals/ services allow better control of dyspnea.<sup>9,10,12,16,27,28</sup>

## Conclusion

The efficacy of the drug regimen and adverse effects control can be enhanced by the use of non-pharmacological techniques simultaneously which contribute to the reduction of basal pain intensity and control of exacerbations, increase comfort, well-being, reduce the level of anxiety, pain and dyspnea which are results sensitive to nursing care.<sup>18</sup> The combination of two or more symptoms experienced at the same time can lead to high levels of distress which when undervalued or sub treated predisposes to the appearance of burden symptoms. Concomitantly the manifestation of a symptom rarely occurs in isolation so both assessment and treatment require a comprehensive and multi-modal approach.

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## Conflict of interest

The author declares no conflict of interest.

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