Original Article

Prevalence and Characteristics of Pain in Patients Awaiting Lung Transplantation

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Abstract

Context. Pain in patients awaiting lung transplantation is not well known.

Objectives. This study prospectively investigated prevalence and characteristics of pain in these patients.

Methods. Assessment, undertaken at the time of registration, comprised an interview, a physical examination by a pain-qualified anesthesiologist, and a questionnaire completed by the patient and investigator. This questionnaire included evaluation of pain (intensity, location, sensory and affective qualifications, and treatment), detection of neuropathic pain, and assessment of anxiety and depression. A patient was considered "with pain" when at least one of the following criteria was met: 1) positive answer to the question "Do you suffer regularly from pain?" and 2) score greater than 3 on at least one of three numeric pain scales (current, maximal, and average during the last eight days) ranging from 0 (no pain) to 10 (most severe pain imaginable).

Results. One hundred forty-three patients were enrolled. Prevalence of pain was 59%. Three independent variables were correlated to the magnitude of the average pain score for the preceding eight days: female gender ($P = 0.003$), cystic fibrosis ($P = 0.02$), and depression score ($P = 0.02$). Among the pain patients, 39% took analgesic drugs daily and 36% regularly but less than daily; 2% used opioids. Nineteen percent used nonpharmacological strategies (e.g., hypnosis, relaxation).

Conclusion. This study highlights the prevalence of pain in this population and specific problems associated with pain such as anxiety and depression. Appropriate assessment and treatment of pain should be considered a component of pretransplantation management.   J Pain Symptom Manage 2015;49:548−554. © 2015 American Academy of Hospice and Palliative Medicine. Published by Elsevier Inc. All rights reserved.

Key Words
Pain, lung transplantation, cystic fibrosis

Introduction

Lung transplantation is an accepted treatment for patients with end-stage lung disease, a clearly nonhomogeneous population of patients suffering mainly from cystic fibrosis (CF), emphysema, and lung fibrosis. Optimal preparation for transplantation is a goal for the multidisciplinary teams involved in their management. To date, few studies have assessed the prevalence of pain in this population of patients. Two studies focusing on pretransplant quality of life have shed some light on the prevalence of pain in this population. Feltrim et al.[1] assessed pain using the specific domain of the Short-Form 36 Health Survey and found that the limitations caused by pain significantly affected the bronchiectasis group and that the CF group was less affected. Dobbels et al.[2] assessed the perceived health status among solid organ transplant candidates using the European Quality of Life (EuroQoL) scale; 67% of the lung transplant candidates reported moderate problems in the pain/discomfort dimension and 16% severe problems. No study has so far objectively

assessed the features and management of pain in this population. We hypothesized that pain can be under-diagnosed and undertreated in these patients.

Chronic pain is a common feature in Western populations.[3] Its prevalence may be higher in patients on a lung transplant waiting list as a result of specific medications, physical limitations, and possible involvement of other organs.[4–10] Moreover, many of them have had a chronic disease for their entire lives, and all of them have to cope with progressive deterioration in their quality of life while facing a fatal issue because of the uncertain availability of an organ. The risk of pulmonary exacerbation and death has been associated with higher levels of pain.[11] Moreover, pain and decreased health-related quality of life have been shown to affect subsequent survival.[12]

The aims of this study were to determine the prevalence, management, and features of pain in a population of lung transplant candidates.

Methods

Population

This prospective study was approved by an Institutional Ethics Committee (Comité Consultatif de Protection des Personnes dans la Recherche Biomédicale, Hôpital A. Paré, N° SC 10 02 17, Boulogne Billancourt, France). From June 2008 to May 2011, consecutive patients who gave written informed consent were recruited for this study when registering on the waiting list for lung transplantation. Exclusion criteria were patients younger than 18 years and patients in unstable condition referred for emergency transplantation.

Questionnaires

Pain assessment was undertaken during the two-day hospital stay required for registration. It comprised a 45-minute interview and physical examination by a pain-qualified anesthesiologist. Patients scored self-evaluation questionnaires; the investigator checked their answers and then asked additional questions to clarify location and management of pain.

The paper questionnaire included three evaluations of pain (current pain, maximal pain in the last eight days, and average pain in the last eight days) on a numeric scale ranging from 0 (no pain) to 10 (most severe pain imaginable).[13,14] A patient was considered "with pain" (as opposed to "pain free") when at least one of the following criteria was met: 1) positive answer to the question "Do you suffer regularly from pain ?" and 2) score greater than 3 on one or more of the three numeric pain scales.

The description of location and nature of pain was assessed using diagrams of the body and answers to a questionnaire on pain location and circumstances. It allowed recognition of chest pain, back pain (lumbar and/or dorsal), headache or migraines, abdominal pain, limb pain, joint pain, pain related to scars and/or previous surgery, and procedure-related pain (mainly fiberoptic bronchoscopy).

Sensory and affective qualifications of pain were assessed using the short-form "Questionnaire Douleur Saint-Antoine" (QDSA), a French adaptation[15] of the short-form McGill Pain Questionnaire.[16] Patients rate a list of 16 adjectives describing their pain for the presence and intensity; some of them are sensory (e.g., burning, throbbing) and others affective (e.g., depressing, exhausting). An answer of "moderate or severe" was considered a positive answer for each qualification.[15,17]

Neuropathic pain was ascertained using the DN4 questionnaire (Douleur Neuropathique en 4 questions), which is a 10-question screening tool. The first group of questions characterizes pain (burning, painful cold, electric shocks); the second group determines whether pain is associated with one or more of the following symptoms in the same area (tingling, pins and needles, numbness, itching, and if it is increased by rubbing skin in the painful area). In addition, two items require a physical examination to reveal if there is hypesthesia to touch and pinprick in the painful area. Each item scores 1, and if the total score is 4 or higher, the pain is likely to be neuropathic.[18]

Anxiety and depression were assessed using the Hospital Anxiety and Depression Scale (HADS).[19] The HADS is a 14-item scale; seven of the items relate to anxiety and seven to depression. Each item on the questionnaire is scored from 0 to 3; consequently, a patient can score from 0 to 21 for depression and/or for anxiety. The cutoff value for each subscale is still under discussion but, in accordance with frequent recommendations, we considered that a total score of above 10 was indicative of a clinical diagnosis of moderate-to-severe anxiety or depression.[20]

Regarding pharmacological pain management, analgesic medications taken by the patients were assigned to one of the three steps of the World Health Organization's (WHO) analgesic ladder.[21] Only medications taken daily or regularly but less frequently than daily were recorded. Nonpharmacological treatments were ascertained by an open-ended question. Relaxation, hypnosis, mindfulness-based therapy, transcutaneous electrical nerve stimulation, and "other" were listed as possible answers. Active physical therapy and reconditioning were recorded as absent or present.

Statistical Analysis

Descriptive statistics provide mean $\pm$ SD (range) for normally distributed continuous variables and median (first − third quartiles) for ordinal variables. Counts