

Brief Report

Patient-Controlled Therapy of Breathlessness in Palliative Care: A New Therapeutic Concept for Opioid Administration?

Andrea Schmitz, MD, Christian Schulz, MD, MSc, Uta Friebel, MD, Thomas Hohlfeld, MD, PhD, and Claudia Bausewein, MD, PhD

Interdisciplinary Center for Palliative Medicine (A.S., C.S.), Medical Faculty; Department of Anesthesiology (A.S., U.F.), Medical Faculty; and Institute of Pharmacology and Clinical Pharmacology (T.H.), Medical Faculty, Heinrich-Heine-University Düsseldorf, Düsseldorf; and Department for Palliative Medicine (C.B.), Munich University Hospital, Ludwig-Maximilians-University, Munich, Germany

Abstract

Context. Breathlessness is one of the most distressing symptoms experienced by patients with advanced cancer and noncancer diagnoses alike. Often, severity of breathlessness increases quickly, calling for rapid symptom control. Oral, buccal, and parenteral routes of provider-controlled drug administration have been described. It is unclear whether patient-controlled therapy (PCT) systems would be an additional treatment option.

Objectives. To investigate whether intravenous opioid PCT can be an effective therapeutic method to reduce breathlessness in patients with advanced disease. Secondary aims were to study the feasibility and acceptance of opioid PCT in patients with refractory breathlessness.

Methods. This was a pilot observational study with 18 inpatients with advanced disease and refractory breathlessness receiving opioid PCT. Breathlessness was measured on a self-reported numeric rating scale. Richmond Agitation Sedation Scale scores, Palliative Performance Scale scores, vital signs, and a self-developed patient satisfaction questionnaire were used for measuring secondary outcomes. Descriptive and interference analyses (Friedman test) and post hoc analyses (Wilcoxon tests and Bonferroni corrections) were performed.

Results. Eighteen of 815 patients (advanced cancer; median age = 57.5 years [range 36–81]; 77.8% female) received breathlessness symptom control with opioid PCT; daily morphine equivalent dose at Day 1 was median = 20.3 mg (5.0–49.6 mg); Day 2: 13.0 mg (1.0–78.5 mg); Day 3: 16.0 mg (8.3–47.0 mg). Numeric rating scale of current breathlessness decreased (baseline: median = 5 [range 1–10]; Day 1: median = 4 [range 0–8], $P < 0.01$; Day 2: median = 4 [range 0–5], $P < 0.01$). Physiological parameters were stable over time. On Day 3, 12/12 patients confirmed that this mode of application provided relief of breathlessness.

Conclusion. Opioid PCT is a feasible and acceptable therapeutic method to reduce refractory breathlessness in palliative care patients. *J Pain Symptom Manage* 2016;51:581–588. © 2016 American Academy of Hospice and Palliative Medicine. Published by Elsevier Inc. All rights reserved.

Key Words

Breathlessness, dyspnea, therapy, patient-controlled therapy, opioid, palliative care

Introduction

Breathlessness (dyspnea) is one of the most distressing symptoms experienced by 50%–70% of palliative care patients across diagnoses (advanced cancer,

advanced organ failure), and effective methods of drug administration for fast symptom relief are needed.^{1–3} Although oral, buccal, and parenteral routes of provider-controlled administration have

The trial is registered in German Clinical Trials Register (DRKS-ID DRKS00004232 and Universal Trial Number [UTN] is U1111–1132–6335).

Address correspondence to: Christian Schulz, MD, MSc, Interdisciplinary Center for Palliative Medicine, University Hospital

Düsseldorf, Moorenstraße 5, D-40225 Düsseldorf, Germany. E-mail: christian.schulz@med.uni-duesseldorf.de

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been described for drug application in breathlessness symptom control, no data exist today on the use of patient-controlled drug administration.

Patient-controlled analgesia (PCA) is defined by Pasero et al.^{4,5} as “an interactive method of pain management that permits patients to manage their pain by self-administering doses of analgesics, usually opioids.” PCA has been an established treatment for pain management in postoperative settings since 1971, and beneficial effects have been demonstrated within palliative care.^{6–8} Currently, there is no definition for the term patient-controlled therapy (PCT) in the German or international literature. Consequently, we propose an adapted version of Pasero et al.’s definition: “Patient-controlled therapy is an interactive method of *symptom* management that permits patients to manage their *symptom* by self-administering doses of *drugs*, usually opioids.”

With the potential benefits of fast and self-sufficient symptom control, PCT could serve as a valuable treatment modality for palliative care patients with breathlessness, but evidence from research is needed (Fig. 1). At present, with the exception of one case report, there is no study describing the use of opioid PCT in the treatment of breathlessness in palliative care.⁹

The American College of Physicians makes a strong recommendation for opioid use in patients with serious illnesses at the end of life and unrelieved breathlessness.^{10,11} The Cochrane analysis of Jennings et al.¹² found a highly statistically significant effect for

oral and parenteral opioids in the management of breathlessness.

The main aim of this study was to investigate whether intravenous opioid PCT can be an effective therapeutic method to reduce breathlessness in patients with advanced malignant disease. The secondary aim was to study the feasibility and acceptance of opioid PCT in palliative care patients with refractory breathlessness.

Methods

The reporting of this observational epidemiological study follows the STROBE Statement (Strengthening the Reporting of Observational Studies in Epidemiology).¹³

Study Design and Setting

This prospective longitudinal observational study was conducted at the Interdisciplinary Center for Palliative Medicine (ICP) of the University Hospital Düsseldorf in Germany. In this center, more than 600 palliative care patients are treated annually by an interprofessional palliative care team.

Palliative care cancer patients aged 18 years and older, with moderate or severe breathlessness (inclusion criteria), were asked to take part in the study. Severity of breathlessness was measured on a numeric rating scale (NRS), and values $\geq 3/10$ were defined as an indication for routine use of PCT.^{14–16} Treatment

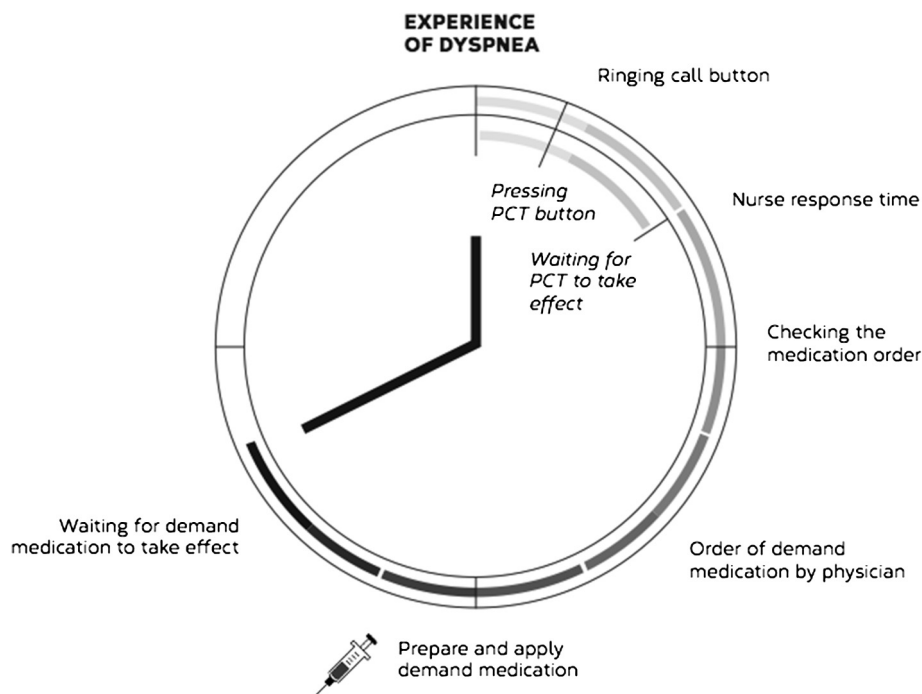


Fig. 1. Reasons for delay of demand medication. PCT = patient-controlled therapy.

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