

Abstract

Impact of Peripherally Inserted Central Catheters on Pain and Quality of Life in Patients With Cancer

Alessio Lo Cascio¹, Giuseppina Aiello², Antonino La Russa², Teresa Sucato², Salvatore Brucato², Mattia Bozzetti³, Daniele Napolitano⁴

¹ Health Professions Directorate, La Maddalena Cancer Center, Palermo, Italy

² Vascular Team, La Maddalena Cancer Center, Palermo, Italy

³ Health Professions Directorate, ASST Cremona, Cremona, Italy

⁴ SITRA and Scientific Directorate, Fondazione Policlinico Universitario A. Gemelli IRCCS, Rome, Italy
(Corresponding Author: locascio.alessio@lamaddalenanet.it)

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Introduction. Peripherally inserted central catheters (PICCs) are widely used in oncology care pathways because they provide reliable venous access, support treatment continuity, and promote the appropriateness of care. Evaluating their impact on patient-reported outcomes, particularly pain and quality of life, requires standardised measures administered at clinically meaningful stages of the care pathway. This study aimed to evaluate changes in pain and quality of life among adult patients with cancer between the day of PICC insertion and the day of catheter removal.

Methods. An observational study with a repeated-measures design was conducted among adult oncology patients undergoing PICC placement. Sociodemographic and clinical characteristics were collected, including age, sex, and tumour site. Quality of life was assessed using the European Organisation for Research and Treatment of Cancer Quality of Life Questionnaire Core 30 (EORTC QLQ-C30), administered on the day of catheter insertion and on the day of catheter removal. Scores were transformed to a 0–100 scale according to the EORTC scoring manual. Differences between the two timepoints were analysed using paired statistical tests.

Results. A total of 48 patients were included, with a mean age of 67.6 years (SD = 10.4); most participants were male. The most frequently represented tumour sites were lung, urogenital, and colorectal cancers. Paired comparisons showed statistically significant improvements in the main patient-reported outcomes between catheter insertion and removal. Physical functioning improved by 33.3 points ($p < 0.001$), as did emotional functioning (mean difference = +33.3; $p < 0.001$). Pain decreased significantly while the device remained in situ (mean difference = –33.3; $p < 0.001$). Overall, improvements were observed in both functional and symptom domains.

Discussion. Comparison between the two assessment timepoints showed a significant reduction in patients' psychophysical burden, particularly in the domains of physical functioning, emotional functioning, and pain. These findings support the routine use of standardised measures of quality

of life and pain to monitor patient-reported outcomes throughout the venous access management pathway and guide targeted care interventions. Nevertheless, the observational design does not allow the observed changes to be attributed exclusively to the presence of the catheter.

Keywords: Peripherally Inserted Central Catheter, Oncology Nursing, Quality of Life, Pain, Patient-Reported Outcomes, Patient-Reported Experiences

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