

# The Role and Effectiveness of Subcutaneous Ketamine Infusions for Pain: A Palliative Care Retrospective Audit

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## Background:

Pain is a common symptom experienced by patients in need of palliative care. Patients receiving palliative care who have pain refractory to standard treatments may be prescribed a trial of ketamine<sup>1</sup>. Moderate quality evidence suggests ketamine is efficacious in non-cancer pain, however there is insufficient evidence for use in cancer-related pain (CRP); which affects up to 83% of palliative care patients with cancer<sup>2</sup>.

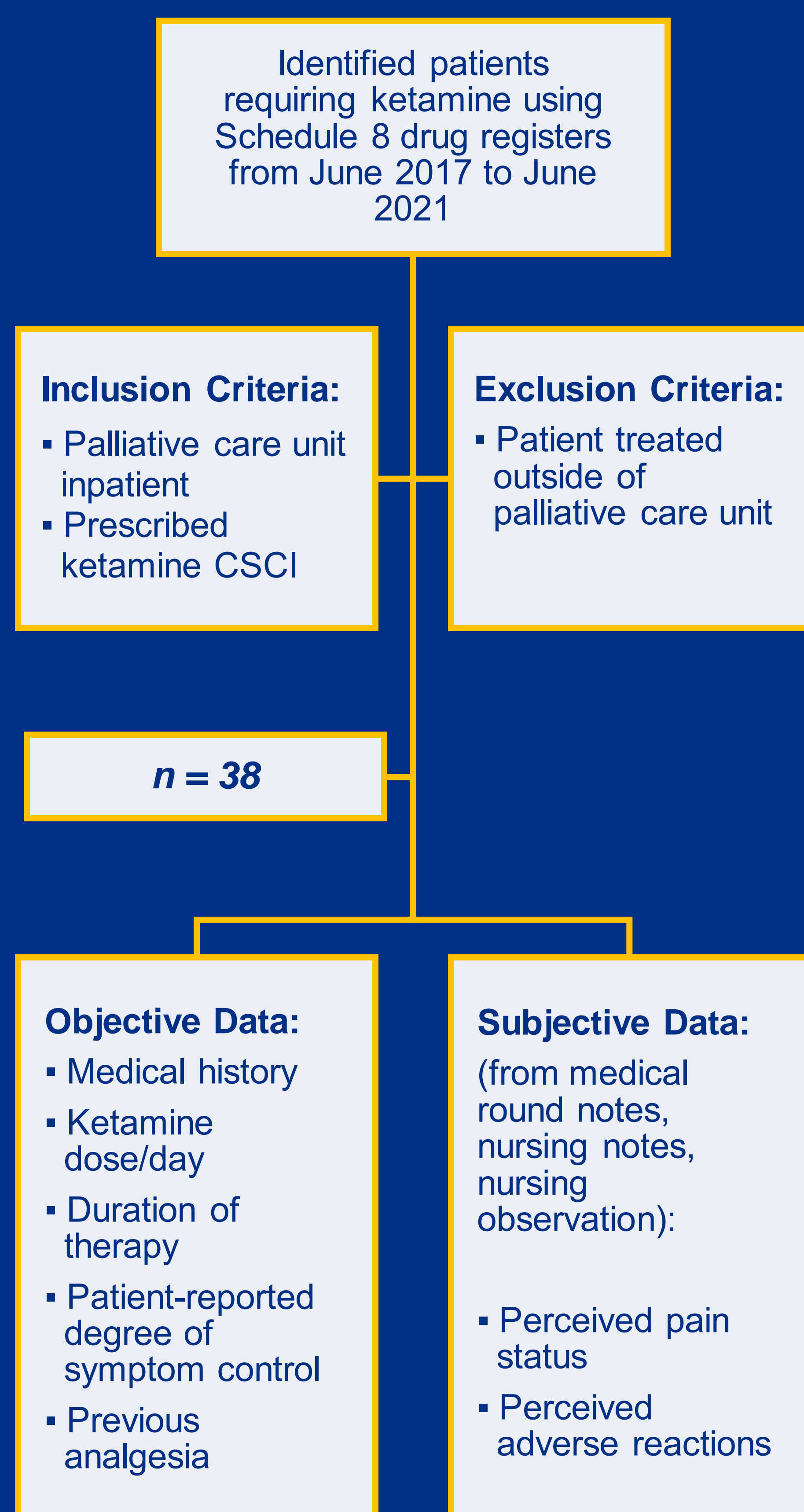
## Aim:

To assess the effectiveness of ketamine continuous subcutaneous infusions (CSCI) in the improvement of refractory pain in an inpatient palliative care unit.

## Methodology:

A retrospective, single-centre audit was conducted for patients in a palliative care inpatient unit [Figure 1].

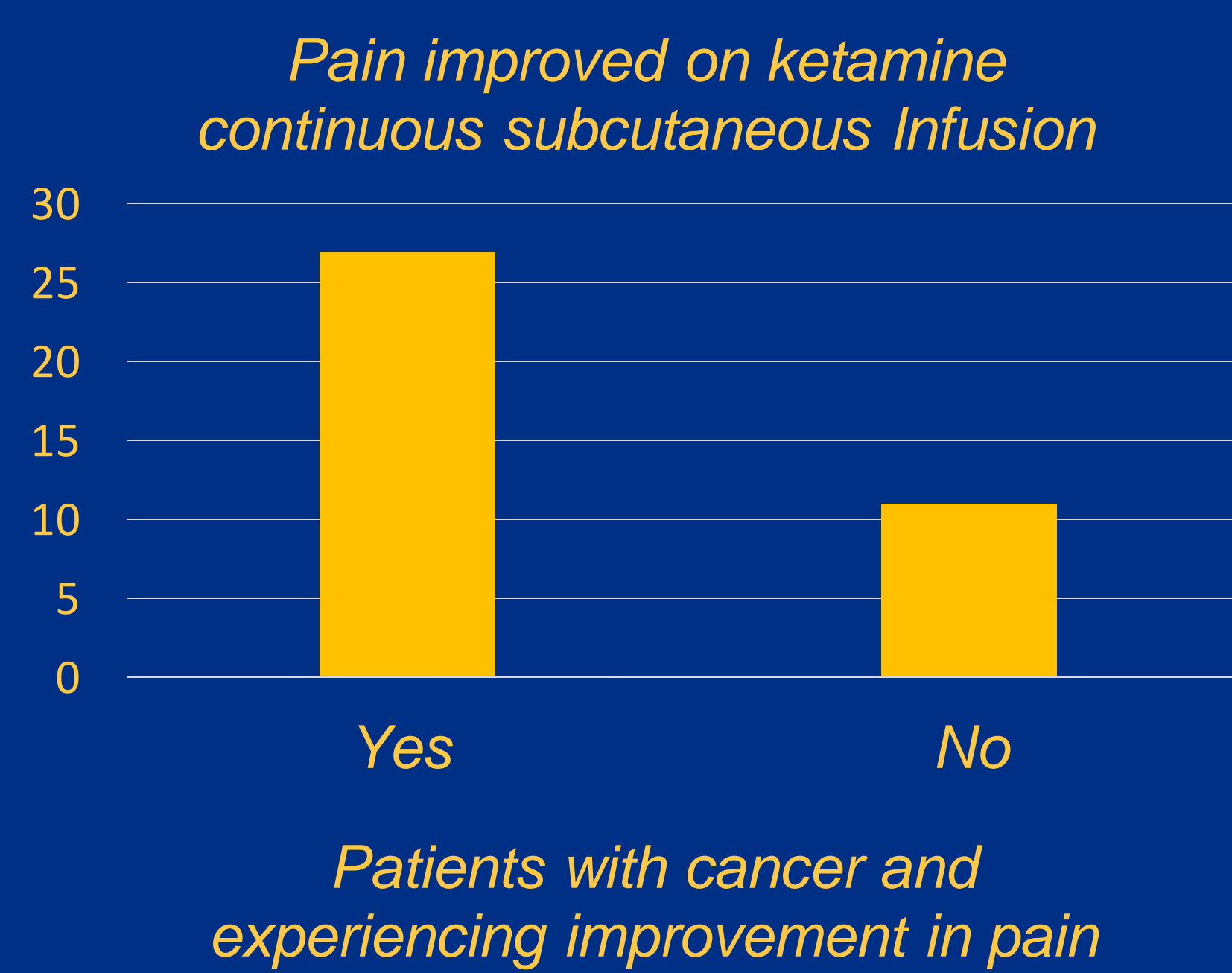
Figure 1: Data collection process



## Results:

Twenty-nine patients had a history of cancer; and nine patients with non-cancer diagnoses including cardiac and infectious disease history. As per patient's reported pain score and physician/nursing assessment, 71% of patients reported pain relief while receiving ketamine CSCI. Of those with CRP, 80% reported any improvement in pain with ketamine CSCI [Figure 2].

Figure 2: Number of patients experiencing pain relief on ketamine CSCI



Thirty-six patients were commenced on ketamine 100mg over 24 hours.

- 40% had trialled other CSCI agents (morphine, hydromorphone, fentanyl).
- Ketamine reduced pain in 67%, 80%, and 100% of patients respectively.

There was a total of 62 instances of adverse effects across 21 patients following ketamine CSCI. The five most common being those listed in Table 1.

## Conclusion:

Ketamine continuous subcutaneous infusions may provide as an alternative agent for overall pain for patients receiving palliative care, and potentially has a role in reducing pain for patients non-responsive to other forms of analgesia.

## References:

1. Prommer EE. Ketamine for pain: An update of uses in Palliative Care. *J. Palliat. Med.* [Online] 2012;15(4): 474–483. Available from: doi:10.1089/jpm.2011.0244
2. Webber K, et al. Symptom prevalence and severity in palliative cancer medicine. *BMJ Support. Palliat. Care.* [Online] 2021; Available from: doi:10.1136/bmjspcare-2020-002357

## Discussion:

Patients receiving palliative care who were commenced on ketamine CSCI have reported pain improvement; thus it is reasonable to correlate ketamine CSCI to pain reduction. Ketamine CSCI appears to be effective in reducing CRP in this population. However, results are confounded by inconsistent pain score documentation, and pain changes may be attributed to other factors.

Despite ketamine CSCI analgesic benefits, use can be limited secondary to adverse effects [Table 1]. Adverse effects may present due to comorbidities or from use of other medications. It is difficult to establish whether reported adverse effects are purely related to ketamine administration.

Table 1: Most common adverse effects of ketamine CSCI

Adverse Effect	% Reported
Sedation	19%
Nausea	9.7%
Delirium	9.7%
Restlessness	8%
Myoclonus	6.5%

Ketamine was prescribed by palliative care specialists, thus results may differ if prescribed by less experienced prescribers. Results cannot be generalised to other hospitals, and may not encompass all possible outcomes. Further research is required to establish ketamine's role in other patient cohorts, and effectiveness in larger sample sizes.