

# Postoperative pain management using a patient controlled analgesia device

## Introduction

Patient controlled analgesia (PCA) is an established method of providing post-operative analgesia. Despite this, a 35% incidence of moderate to severe pain has been reported for those using PCA devices, taken from a systematic review of 165 published studies [1].

The aim of this study was to investigate incidence and management of moderate to severe pain whilst using a PCA device at our institution.

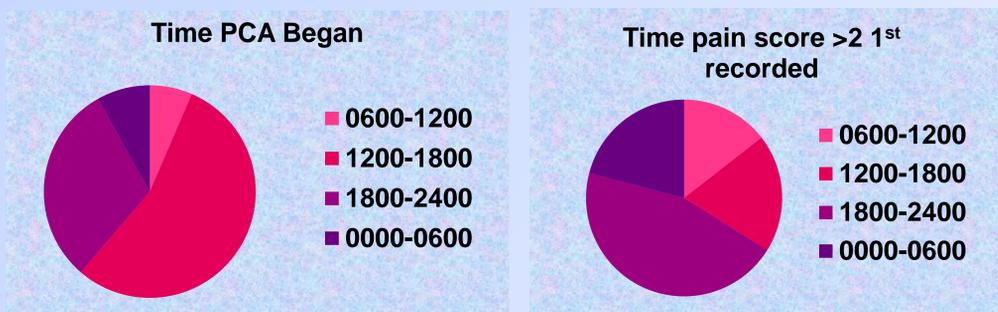
## Methods

Data was collected during two separate monthly periods, in December 2011 (pilot study) and February 2013, for all patients with a PCA device post-operatively who suffered uncontrolled pain (classified as a pain score of two or above indicating moderate to severe pain).

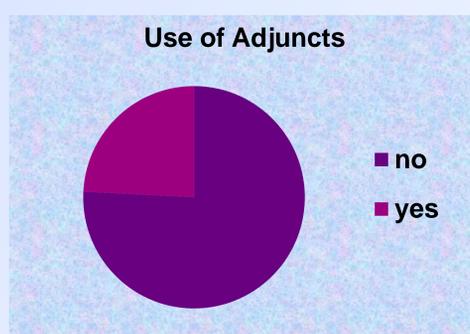
Details regarding use of PCA, analgesic dose, timing of uncontrolled pain, actions taken, and time until controlled pain (pain score less than two) were recorded. The results for both data sets were compared and pooled.

## Results

- ❖ 312 patients used a PCA during the two months studied. 20% suffered uncontrolled pain.
- ❖ Uncontrolled pain occurred out of daytime working hours in 66%.
- ❖ Uncontrolled pain occurred within two hours of commencing PCA use in 37%.

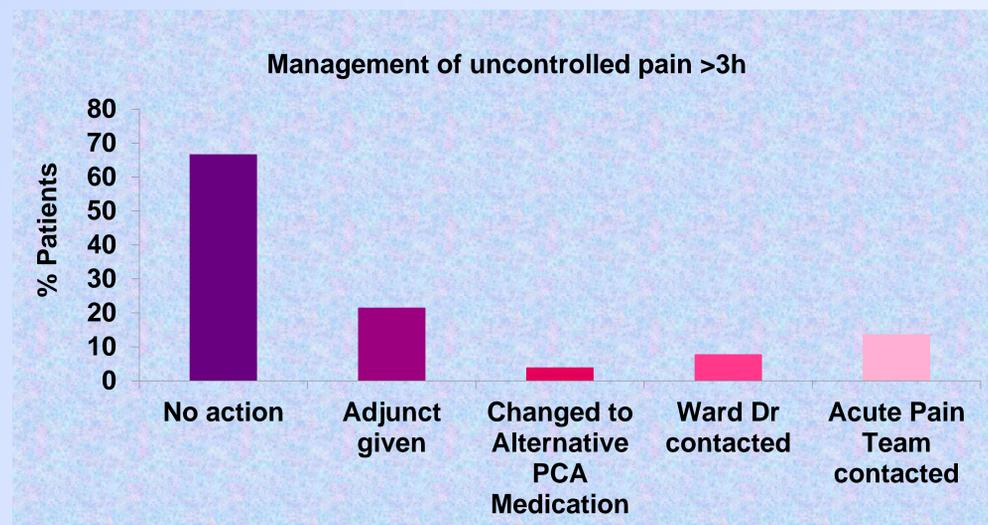


- ❖ Only 40% patients had a noted increase in PCA dose in the subsequent hour.
- ❖ Of the available hourly dose, 30% patients used less than 25% and 77% used less than 50%.
- ❖ Only 24% patients were given an adjunct. In 13% this was Paracetamol (although 48% received this as regular medication). Use of other adjuncts was low.



## Procedures

- ❖ 82% patients remained in moderate or severe pain after 3 hours.
- ❖ At this point, no further action was taken in 67% cases.



- ❖ Mean time to pain control was 7.8 hours (range 1.5-24).
- ❖ This pattern was widespread across all surgical wards.
- ❖ Only 56% cases had documentation of the events in the patients' medical or nursing records.

## Discussion

Despite a long established record of PCA use, it would appear that a significant number of patients continue to suffer uncontrolled pain whilst using the device post operatively, and that management of this group of patients is suboptimal.

A significant proportion of uncontrolled pain occurs within 2 hours of commencing the device, suggesting inadequate analgesic loading pre device, or suboptimal PCA settings.

Less than half of patients increase PCA use when in pain, suggesting a lack of patient education and/or encouragement by staff.

Use of adjuncts is poor and ward doctors and the acute pain team are rarely contacted even after three hours of uncontrolled pain.

A patient who suffers uncontrolled pain is likely to remain in pain for many hours. Most uncontrolled pain occurs out of hours perhaps related to staffing issues.

These results have been presented at a local pain study day to improve staff education in the management of patients with PCA devices, with plans for further educational sessions and re-audit at a later date.

## References

1. Dolin S, Cashman JN, Bland JM. Effectiveness of acute postoperative pain management: I. Evidence from published data. *British Journal of Anaesthesia* 2002; 89: 409-423