

Use of topical opioids on burns

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Introduction & background

- 175 000 ED attendances annually
- Pain difficult to manage
- To investigate whether topical analgesia effective in superficial burns.

Literature review –

Use of topical NSAIDs / LA - limited evidence, mixed results(1-2)

Topical opioids good analgesic effect on chronic inflammatory skin conditions(3-15)

*Could topical opioids therefore reduce
the pain associated with superficial
burns?*

Aim

To test whether topically applied opioids have an analgesic effect when applied to patients attending the ED with superficial burns

Objectives

To compare –

- pain scores at 2, 6 and 12 hours post-dressing
- comfort ratings after 24 hrs
- Additional analgesia after discharge of ...

Jelonet© dressing

Intrasite© gel and morphine dressing

Intrasite© gel and water (placebo)

Ethical approval & sponsorship

Southampton and South West Hampshire
Research Ethics Committee

Sponsors - University of Portsmouth and
Portsmouth Hospitals NHS Trust

Study period March-Dec 2006

Methodology

- Single-centred randomized, placebo controlled trial
- Population -

≥ 16 years and ≥ 50 Kg

Minor superficial burns

Less than 5% total body surface area

Caused by hot liquid, hot surface or sun burn

< 8 hours since injury & no signs of infection

Exclusion criteria

- Burns to the neck, face, head and genitalia
- Electrical / chemical burns
- Patients taking codeine-based medications
- Other distracting injuries
- Presence of pathophysiology affecting perception to pain
- Patients under the influence of alcohol or drugs

- Pain score recorded o/a
- Paracetamol / Ibuprofen orally
- Burnshield© applied
- Patients approached about consent into the study
- Weighed
- Randomized using table of random digits from Research Randomizer Website (<http://www.randomizer.org/forms.htm>).

Control

- 6-layer Jelonet© dressing

Test

- 15g Intrasisite© gel with 1ml 10mg/ml Morphine Sulphate & 6-layer Jelonet© dressing

Placebo

- 15g Intrasisite© gel with 1ml sterile water & 6-layer Jelonet© dressing

Why Intrasite© gel?

- Contains water & propylene glycol – aid absorption of drugs from surface of burn(16-17)
- Cooling effect
- Non-adherent
- Neutral pH that does not irritate the skin
- Maintains moist environment
- Keeps exposed nerve endings bathed in fluid.

Why Morphine sulphate?

- Cheap
- Available in ED
- Remains stable when mixed with Intrasisite© gel⁽¹⁸⁾

Results

- 127 patients identified
- 68 declined to participate or failed to meet inclusion criteria
- 59 recruited
- 10 were lost to follow-up
- 49 included in the final analysis - 17J, 15M, 17P

- Demographics equal across groups except -
- Mean burn size (cm²) –

Jelonet 78.9 (SD 127)

Morphine 26.9 (SD 34)

Placebo 19.7 (SD 19)

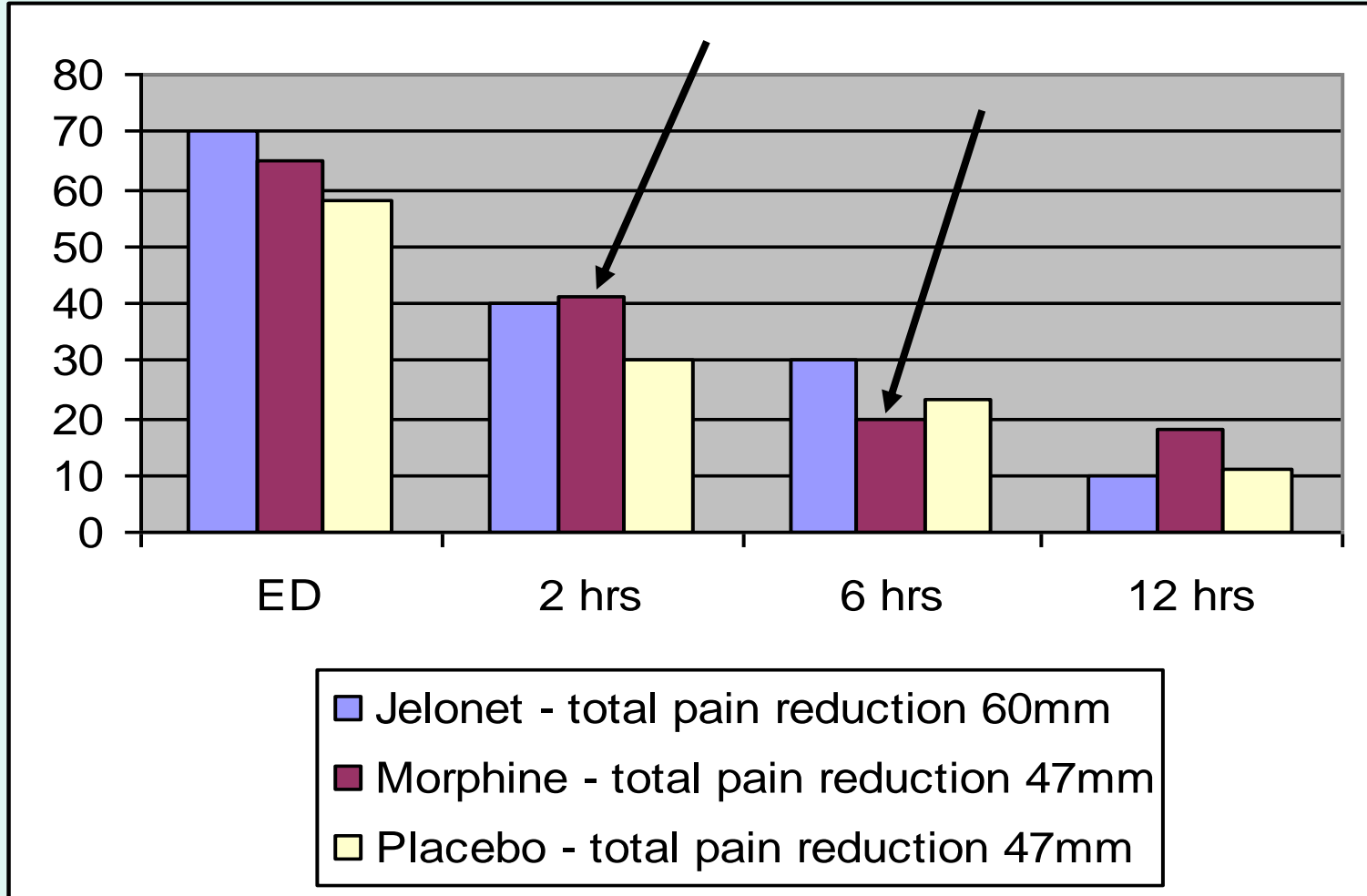
Pain scores

0-100mm Visual Analogue Scale (VAS)

Recorded o/a, 2, 6, & 12 hours post treatment in pain diary.

Standard deviation of 20mm, 5% significance level, power 80%= 63 participants required

Median pain scores - $p=0.27-0.86$



Additional analgesia

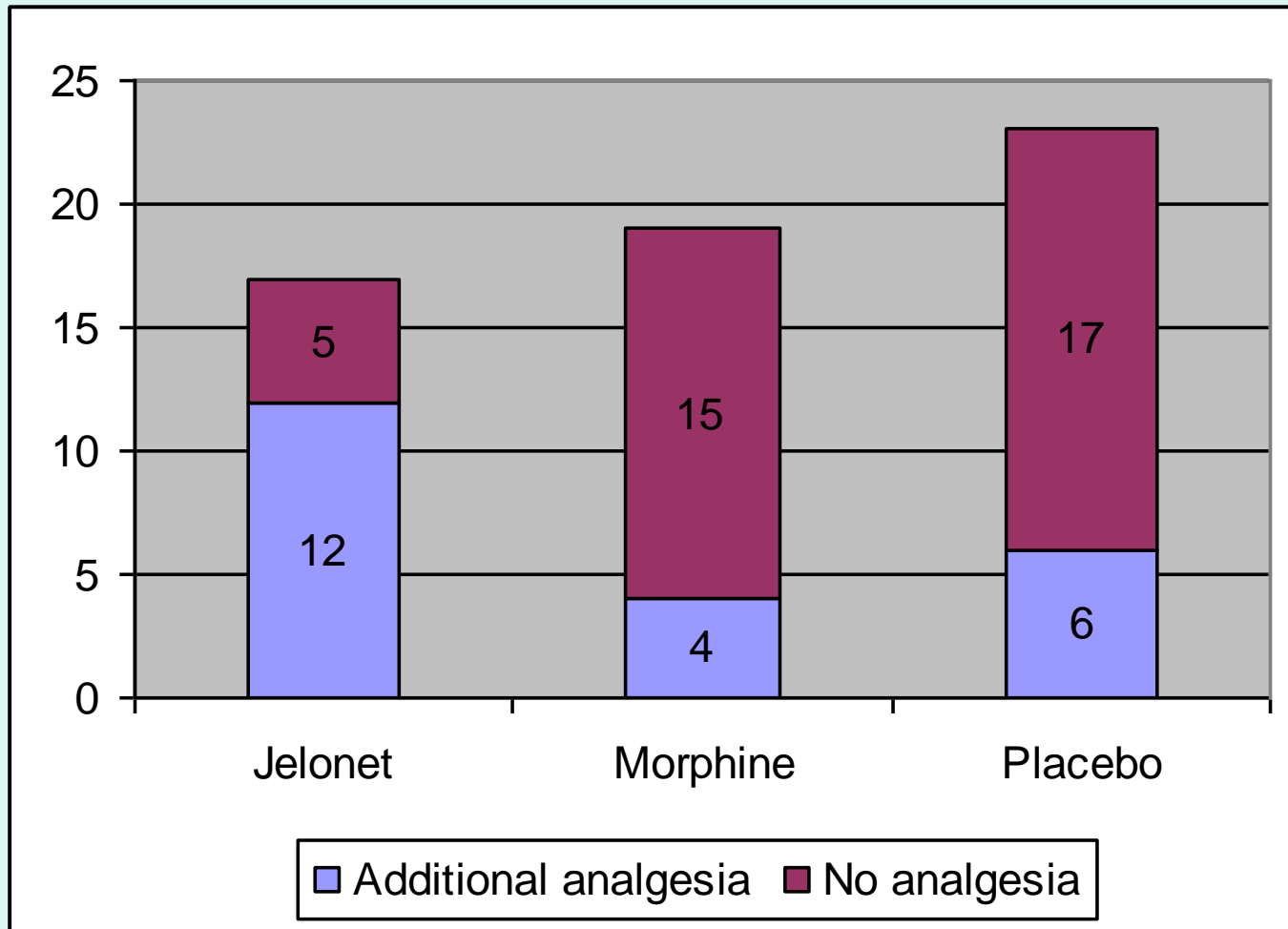
Recorded in pain diary

Converted into units –

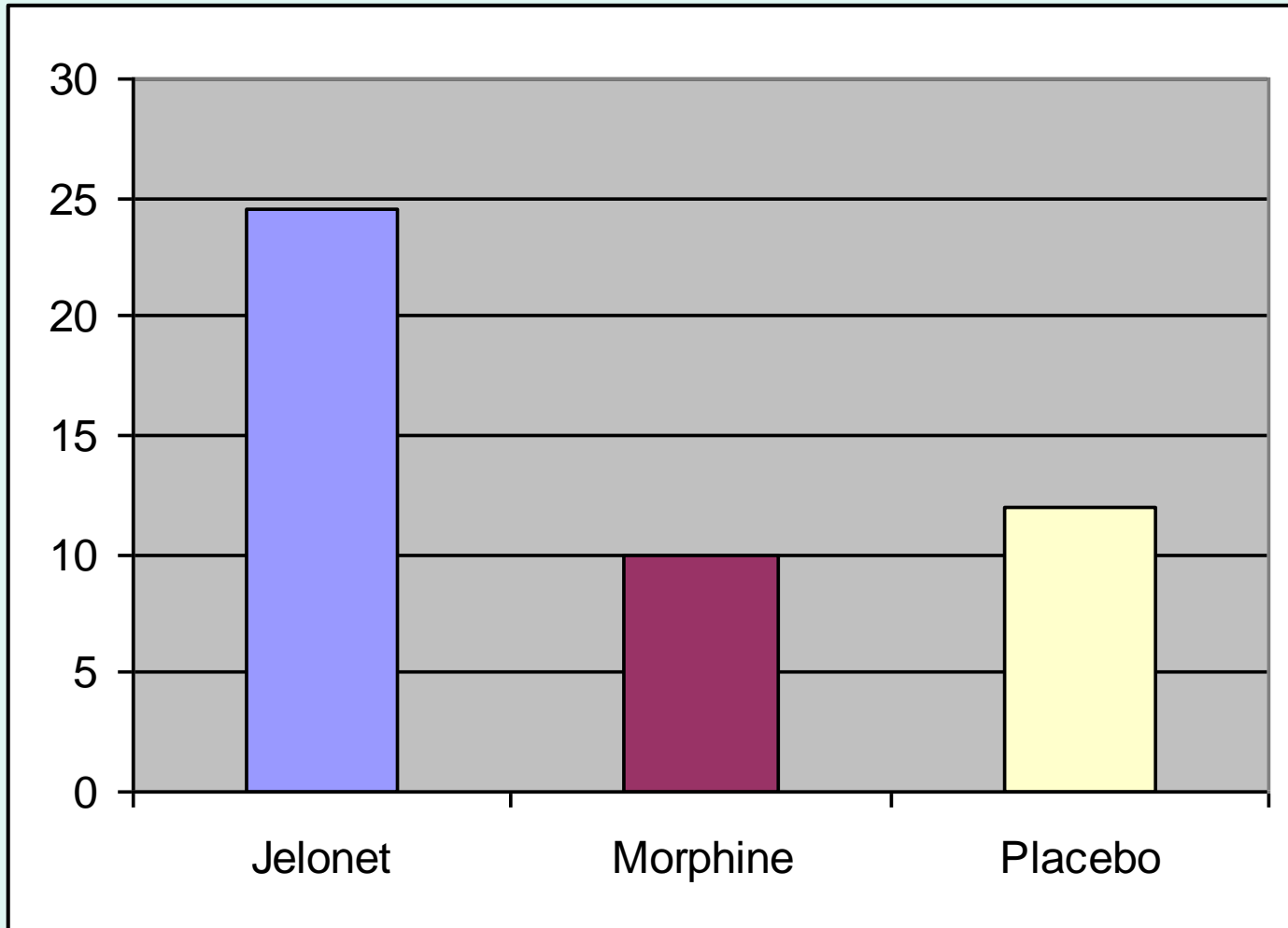
1 unit = 1g paracetamol / 400mg Ibuprofen

½ unit = 500mg paracetamol / 200mg Ibuprofen

Number of patients taking additional analgesia



Total analgesic units - $p=0.05$



Comfort rating

Recorded at f/up

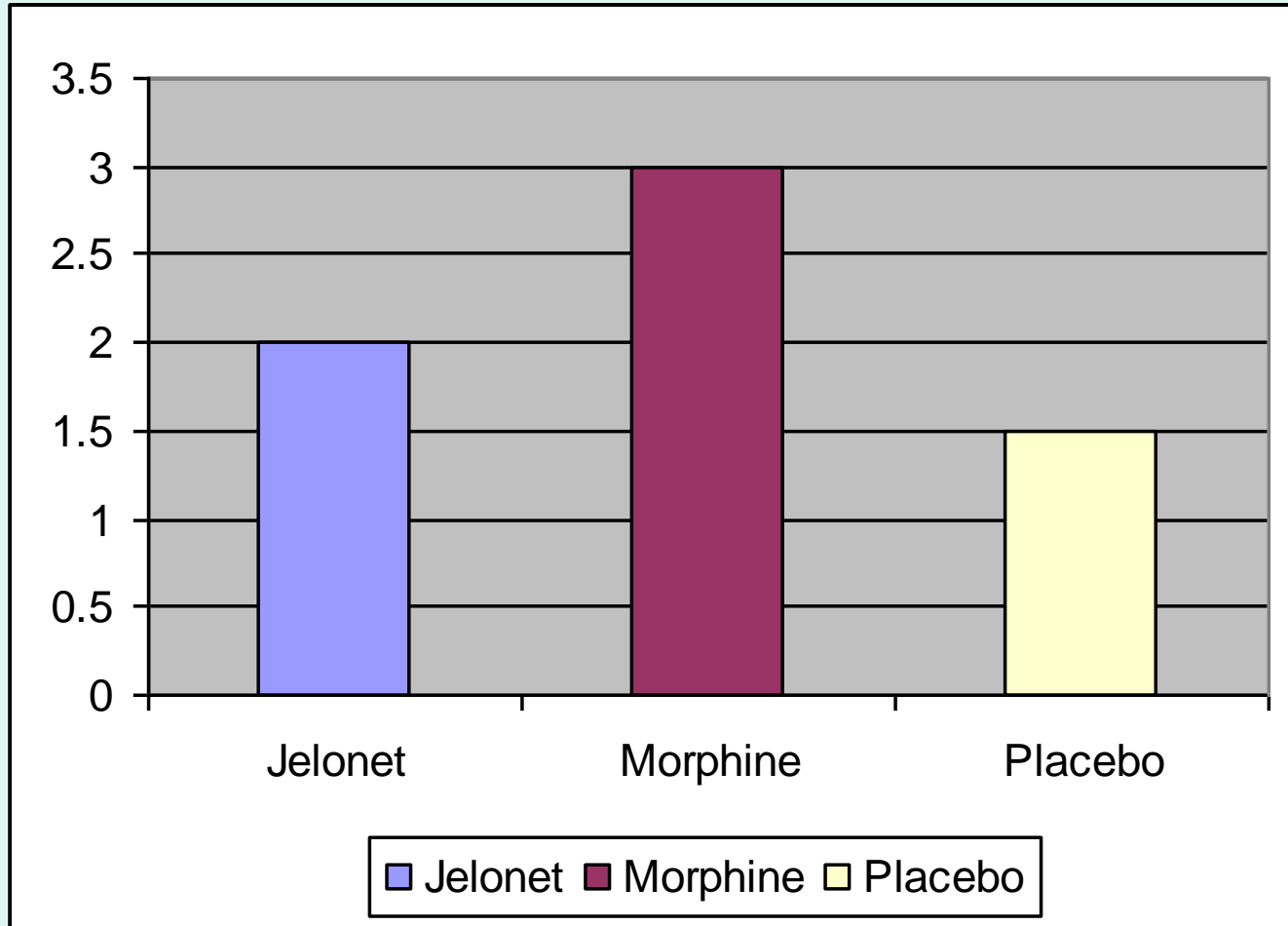
5-point Likert scale

1=very comfortable

3=comfortable

5= very uncomfortable

Median comfort ratings - $p=0.39$



Study limitations

- Fewer participants recruited reducing power
- Strict inclusion criteria limits generalizability
- Lacks pharmacokinetic evidence
- No analysis to assess link with comfort – pain score – analgesia

Conclusion

Pain management of burns difficult

No statistical significance in median pain scores

Morphine group only group to reduce pain by
>20mm at two time intervals (2 & 6 hrs)

Morphine group took less analgesia

Intrasite & morphine safe alternative

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Any
questions?