

Transdermal slow release fentanyl patches for the management of post-operative analgesia following major abdominal surgery: a systematic review.

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Introduction

- ERAS
- Recovery milestones
- Optimal pain relief
- Multimodal analgesia
- PCA
- Transdermal patches

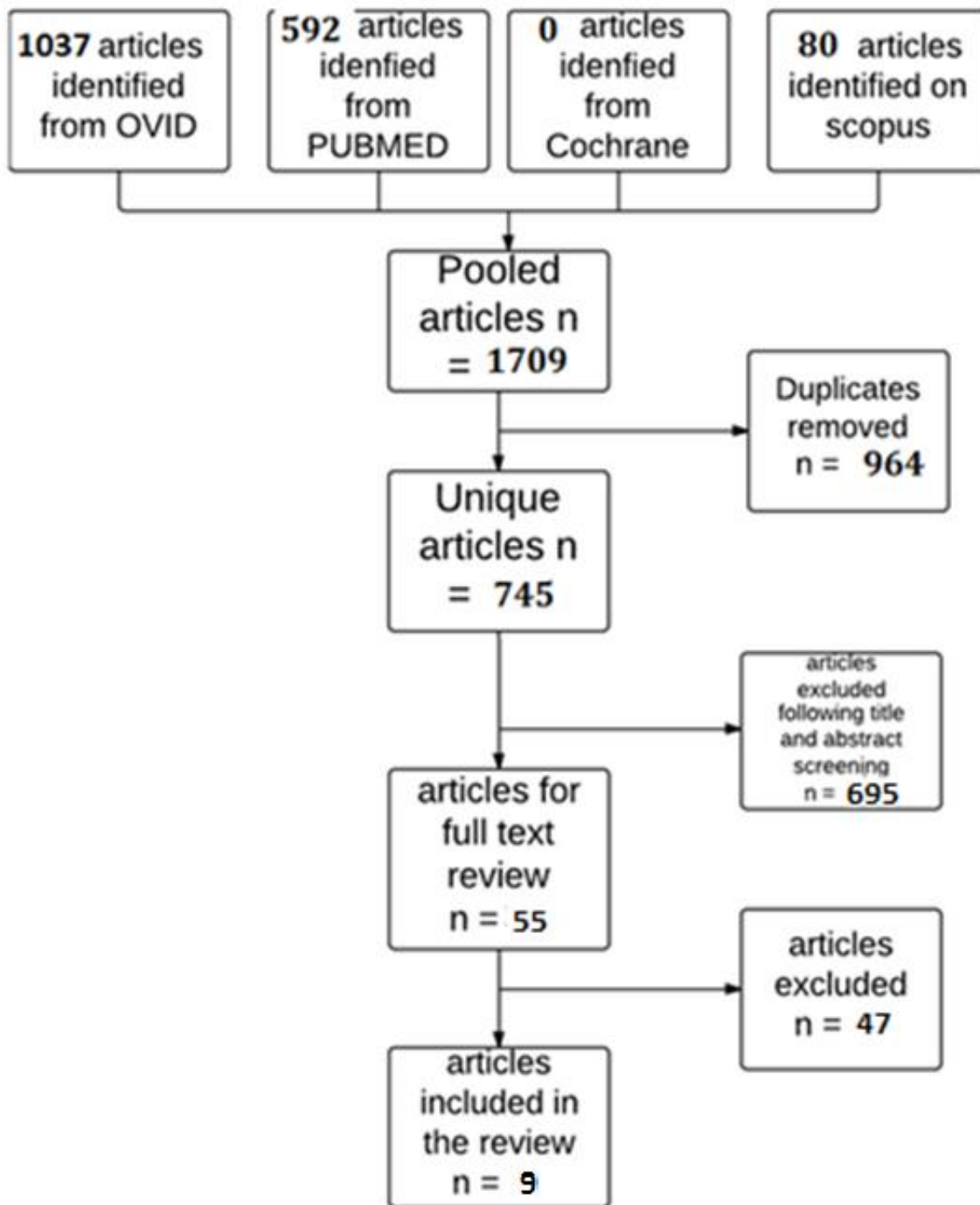
Methods

- Electronic searches were performed on five major databases from inception to October 2015 to identify relevant studies.
- Eligibility decisions, methodological quality, data extraction, and analysis were performed according to predefined clinical criteria and endpoints.
- 2 reviewers

Systematic review

Inclusion criteria:

- RCT/n-RCTs
- Major abdominal surgery – GI, Gynae, Urology
- Open and Laparoscopic



- Orthopaedic studies
- Animal studies
- PCA transdermal fentanyl
- Chronic pain studies

End points

- Primary outcome
 - to determine the reduction in pain score in the patients who received TDF.
- Secondary outcomes
 - to determine reduction in use of supplementary analgesia
 - evaluate adverse effects (a) respiratory depression & requirement for reversal
(b) gastro-intestinal side effects.

Paper Demographics

Characteristic	Number
Total number of patients	730
Placebo	279
Fentanyl patch 25mcg	102
Fentanyl patch 50mcg	156
Fentanyl patch 75mcg	88
Age	44.1 ± 6.6
Male	103 ± 22.3

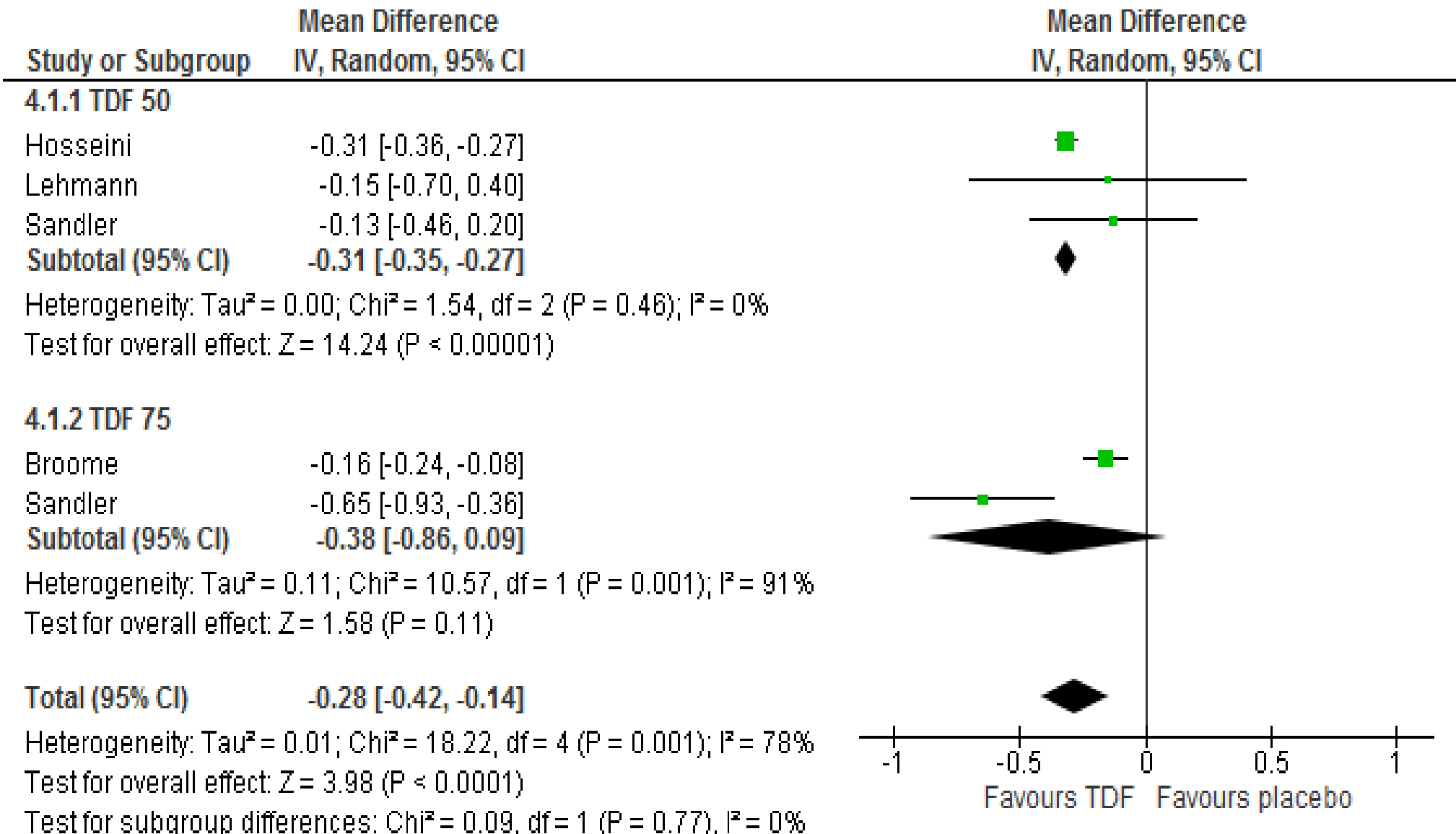
Paper demographics

Author	Year	RCT	Blinding	Number	Type of surgery
Hosseini	2015	y	double	120	Exploratory Laparotomy
Seravino	1992	y	double	95	Abd Gynae Surgery
Broome	1995	y	double	82	Abd Hysterectomy
Miguel	1995	y	double	143	Expl Gynea Laparotomy
Lehmann	1991	y	double	50	Urological
Gourlay	1990	y	double	40	Abdominal
Sandler	1994	y	double	120	Abd Hysterectomy
Lehmann	1997	n	no	40	Abdominal
Rowbothan	1989	y	double	40	Upper Abdominal

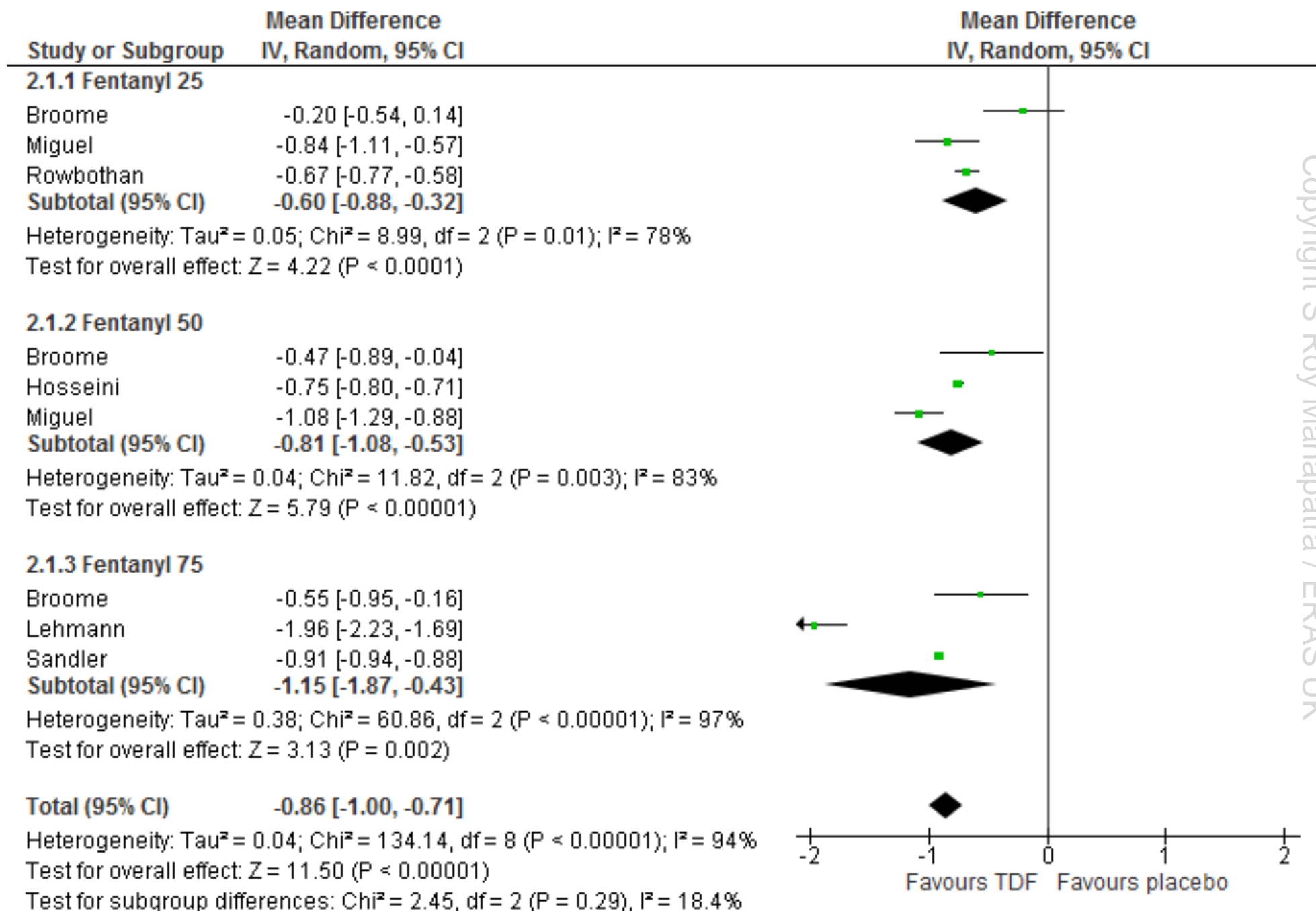
Paper Demographics

Author	Time of application	Duration of application (hrs)	induction agent include fentanyl?	Intra-operative iv fentanyl?	supplementary analgesia
Hosseini	pre-op 10 hrs	36	y (2µg/kg)	y	iv morphine
Seravino	pre-op 1 hr	48	n	n	iv morphine
Broome	pre-op 2 hrs	72	y (150µg)	n	iv morphine
Miguel	pre-op 1 hr	24	y (5µg/kg)	n	iv morphine
Lehmann	pre-op 8 hrs	24	n	y	iv fentanyl
Gourlay	Intra-op 10min	24	n	y	iv pethidine
Sandler	pre-op 2 hrs	72	n	y	iv morphine
Lehmann	pre-op 1 hr	NR	NR	NR	iv morphine
Rowbothan	pre-op 2 hrs	48	y (200µg)	n	iv morphine

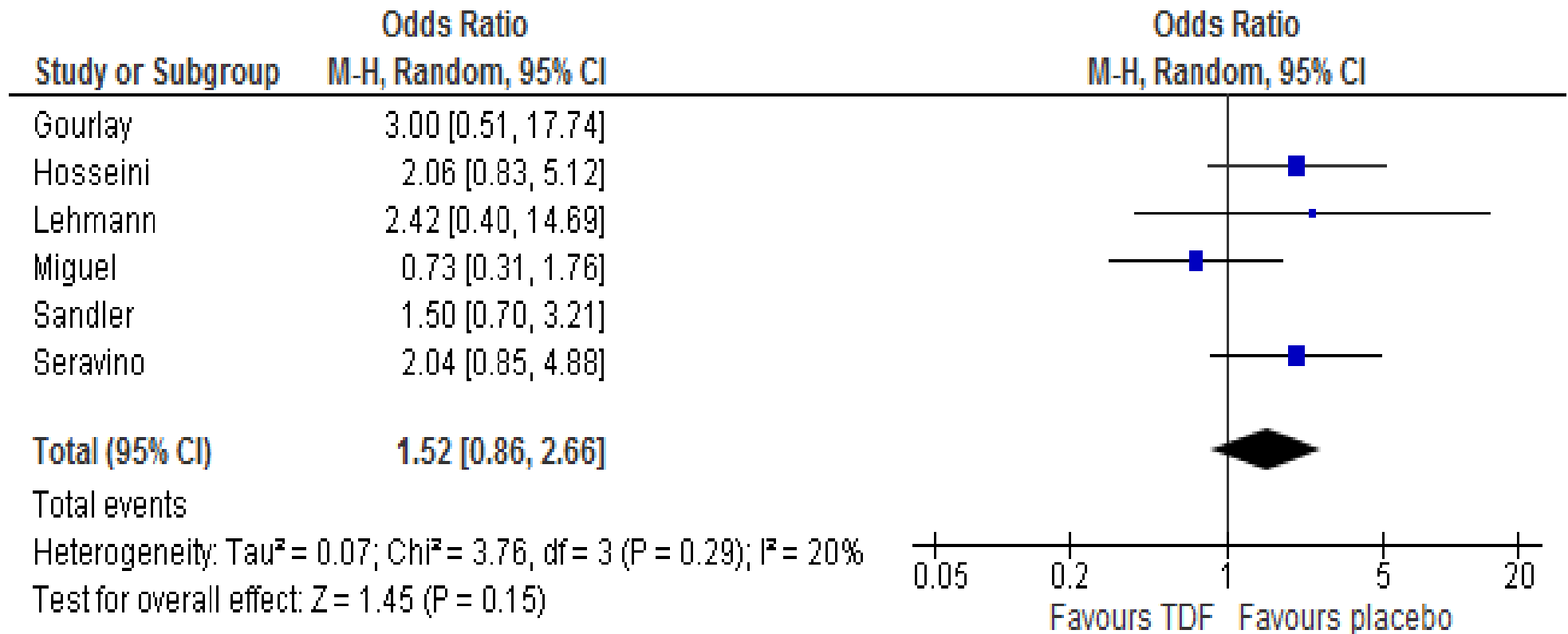
Pain score



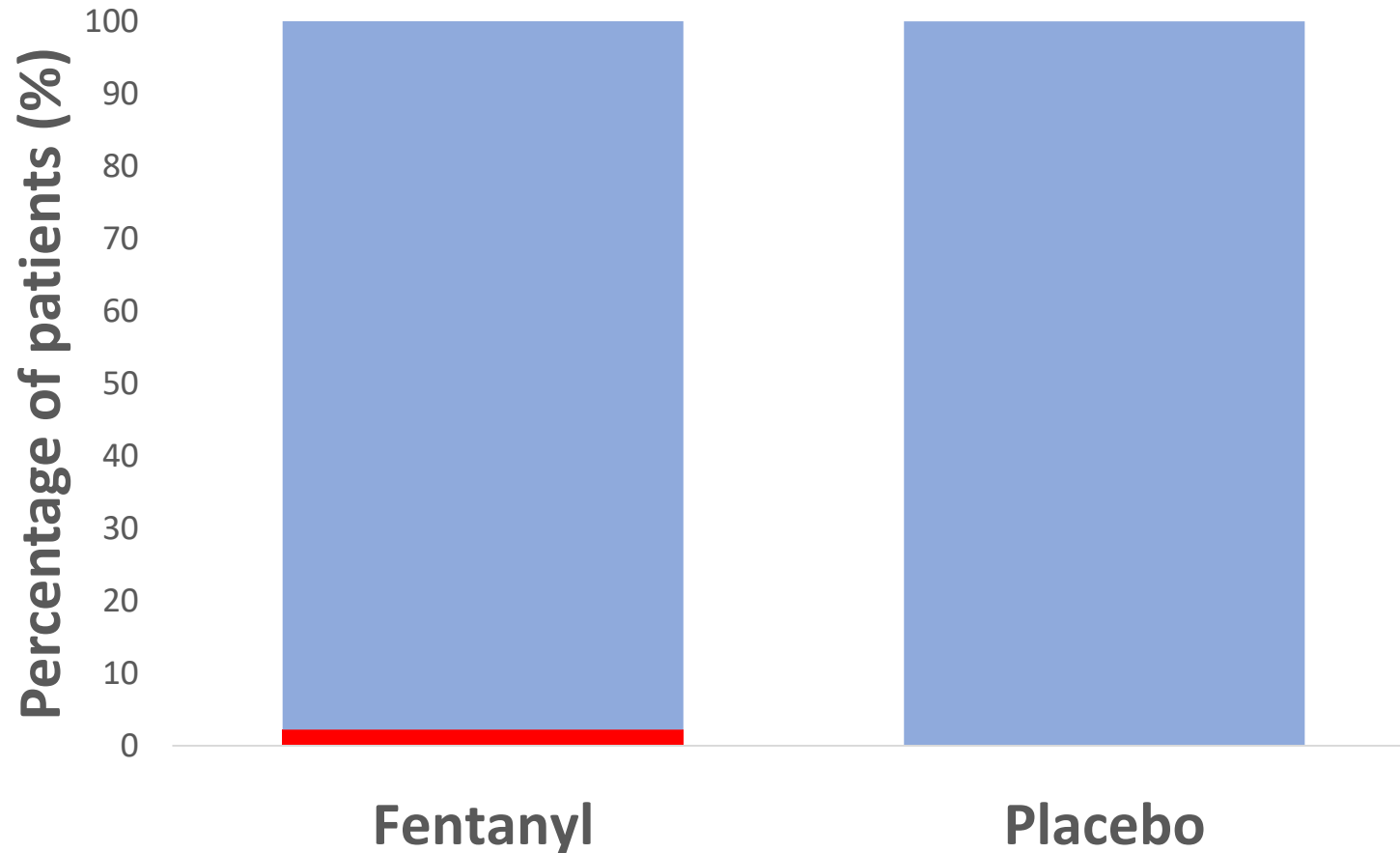
Supplementary morphine usage (24-36hrs post op)



Gastro-intestinal side effects – post operative vomiting



Respiratory depression



- 10 patients required reversal of opioids with naloxone (2.2% - in red)
- 50% of those reversed receive the 75mcg patch
- 0 patients in the placebo group required naloxone

Discussion

- TDF is effective and safe
- Lack of evidence in lower GI surgery
- Lack of knowledge on GI side effects
- Requires high-powered randomised controlled trials to evaluate further

Acknowledgements and Thanks

- The Colorectal Team and Anaesthetic Team at the Countess of Chester