

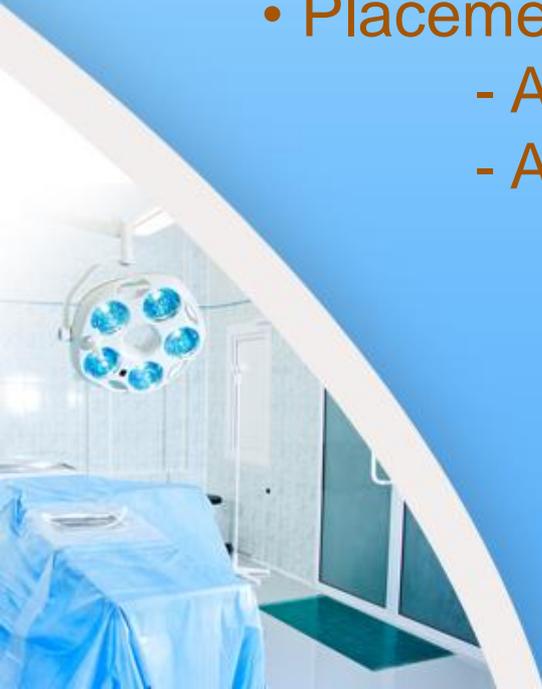
Laparoscopic versus open preperitoneal mesh repair of inguinal hernia: an integrated systematic review and meta-analysis of published randomized controlled trials

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Introduction

- Early days VS now: 50-60% VS 1-4% recurrence
- Chronic groin pain (CGP), foreign body, reduced elasticity, impaired groin compliance
- Placement of mesh in preperitoneal space:
 - Avoid nerve dissection
 - Avoid nerve exposure to bio-reactive mesh



Objective

Systematically analyse the randomized, controlled trials comparing open preperitoneal (OPPR) versus laparoscopic preperitoneal (LPPR) mesh repair of inguinal hernia in terms of their effectiveness in controlling the development of CGP and hernia recurrence.



Methods

Data sources

- Pubmed
- Medline
- Embase
- Cochrane Central Register of Controlled Trials
- References of the published trials

Inclusion criteria

- RCT published before October 2012
- Comparison between OPPR VS LPPR
- Irrespective of language, country or hospital of origin, blinding, sample size



Methods

Data extraction and trial quality analysis

- Two authors independently extracted data and confirmed by third author
- No discrepancies between authors
- Trial scoring according to Jadad et al & Chalmers et al

Variables

- Primary: Chronic groin pain
Recurrence
- Secondary: Postoperative complications
Duration of operation
Postoperative pain



Methods

Statistical analysis

- RevMan 5.1.2
- Combined outcomes of variables expressed as OR or SMD
- Heterogeneity calculation
- Forest plot display



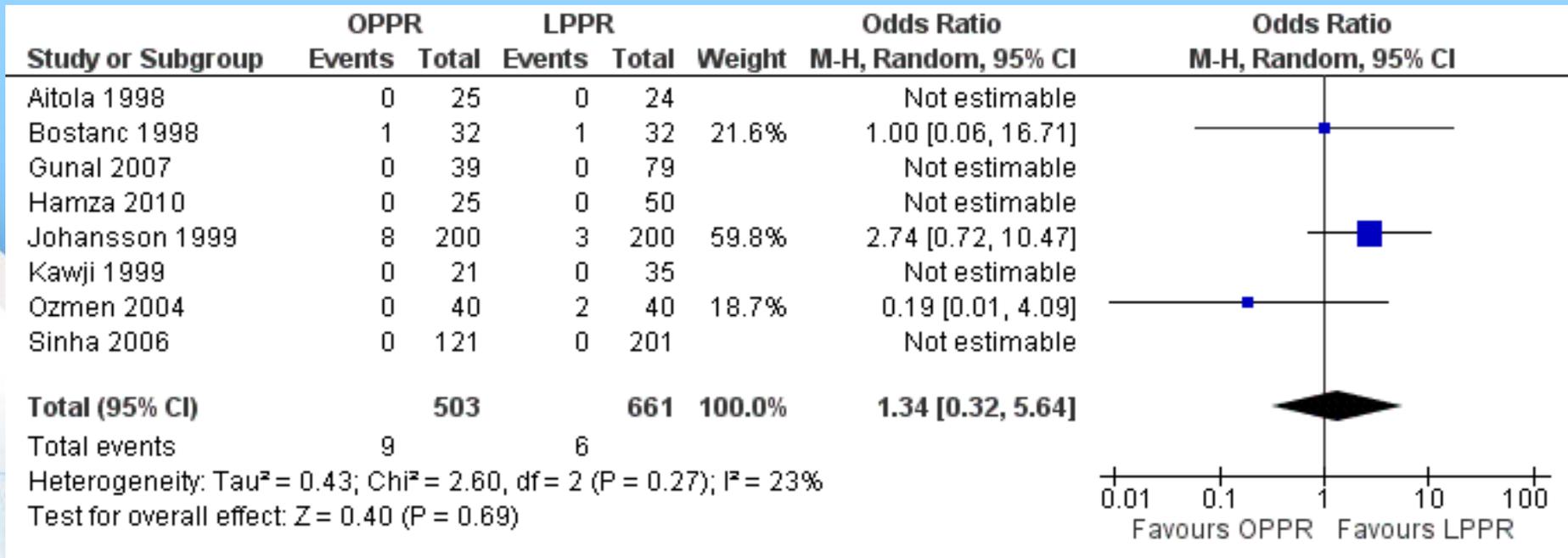
Results

- Ten RCTs: 1286 patients
- OPPR group: 606 patients
- LPPR group: 680 patients



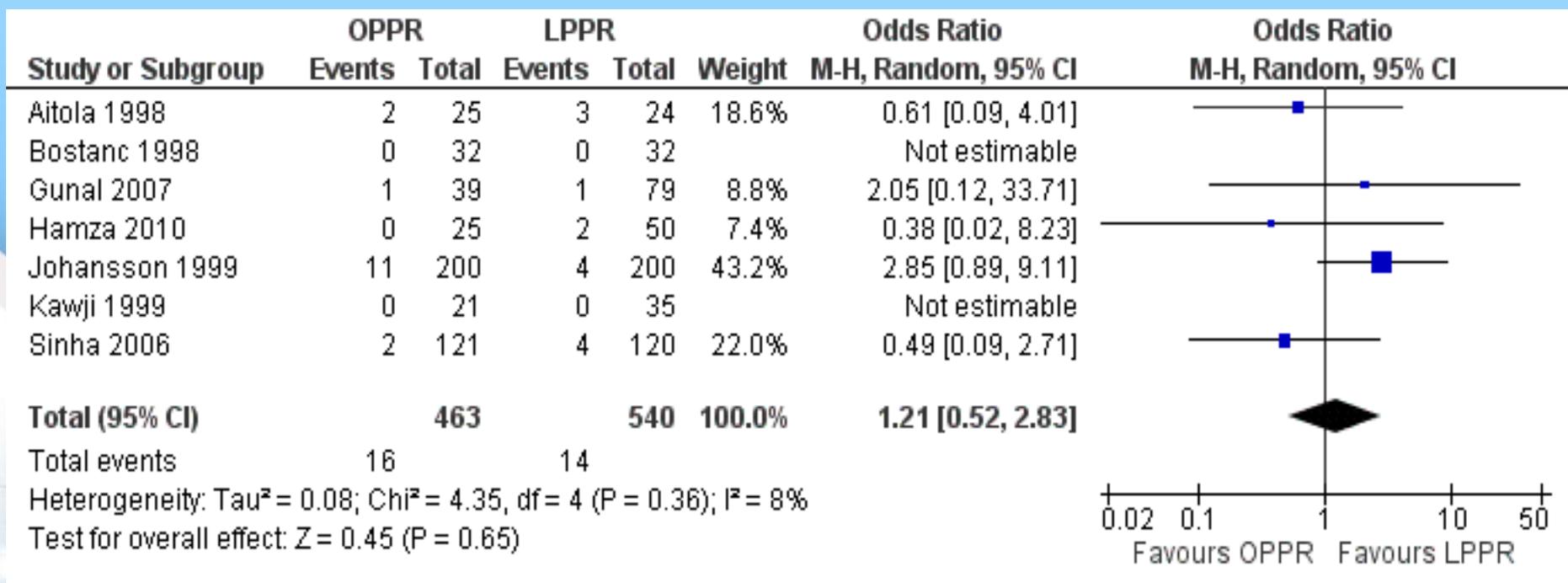
Results - Chronic groin pain

Similar risk of developing chronic groin pain



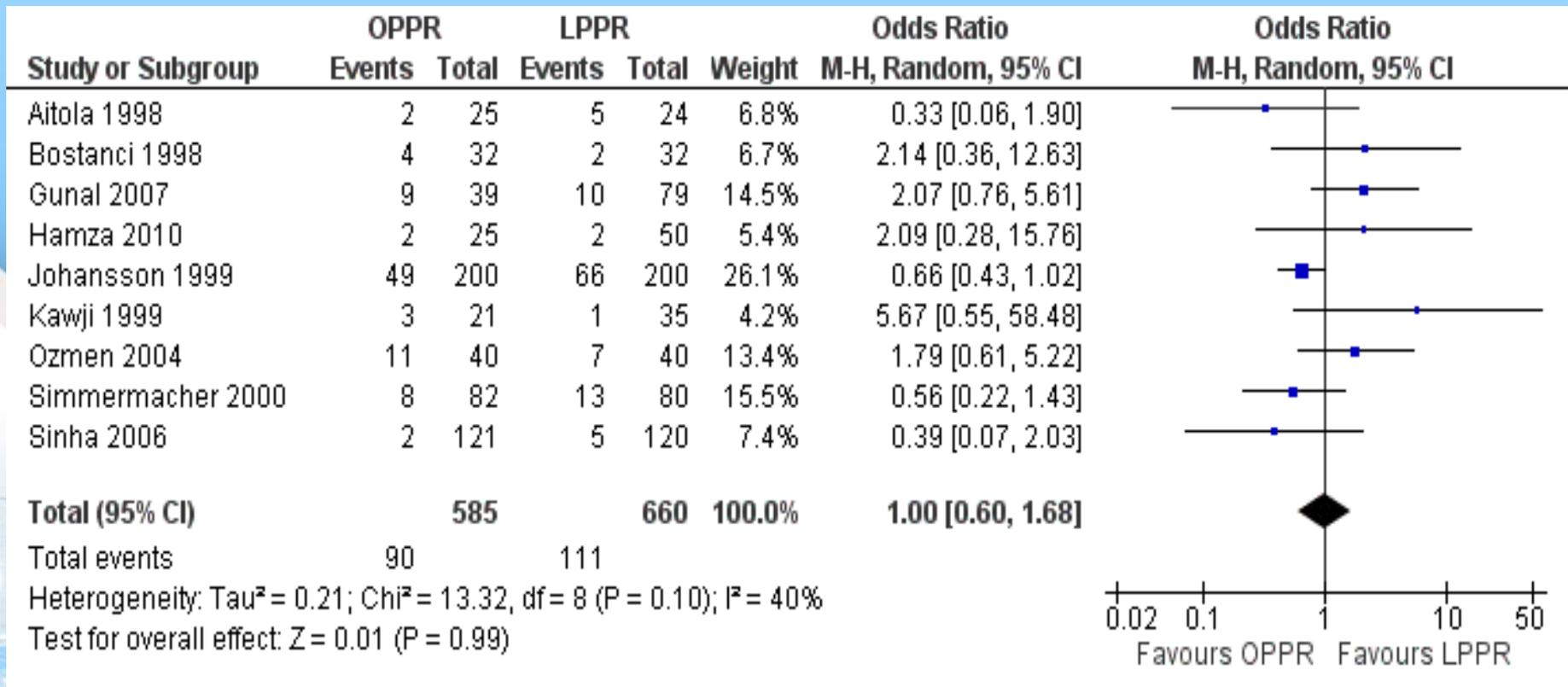
Results - Recurrence

Similar risk of recurrence



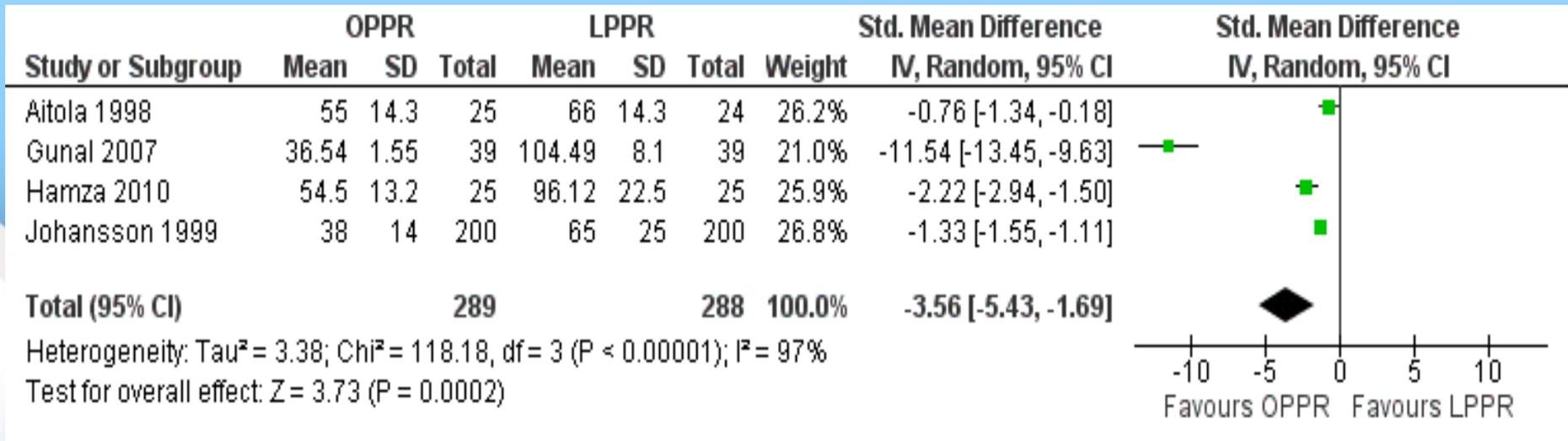
Results - Postoperative complications

Similar risk of developing postoperative complications



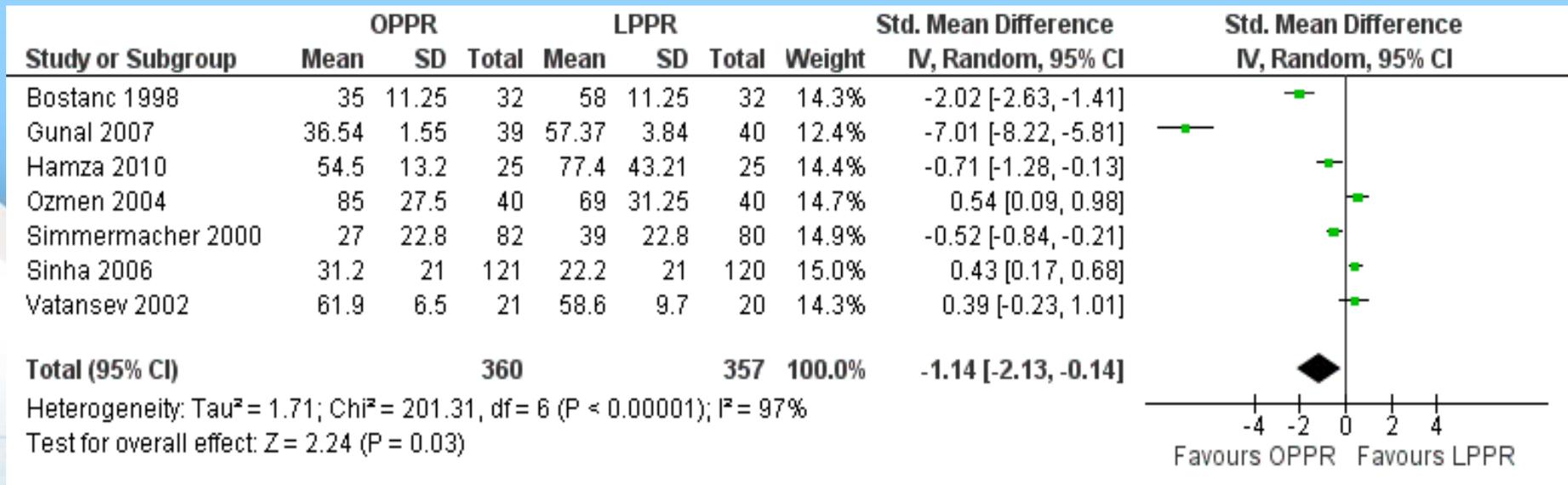
Results - Duration of operation

Duration of operation for OPPR was shorter compared with LPPR (TAPP)



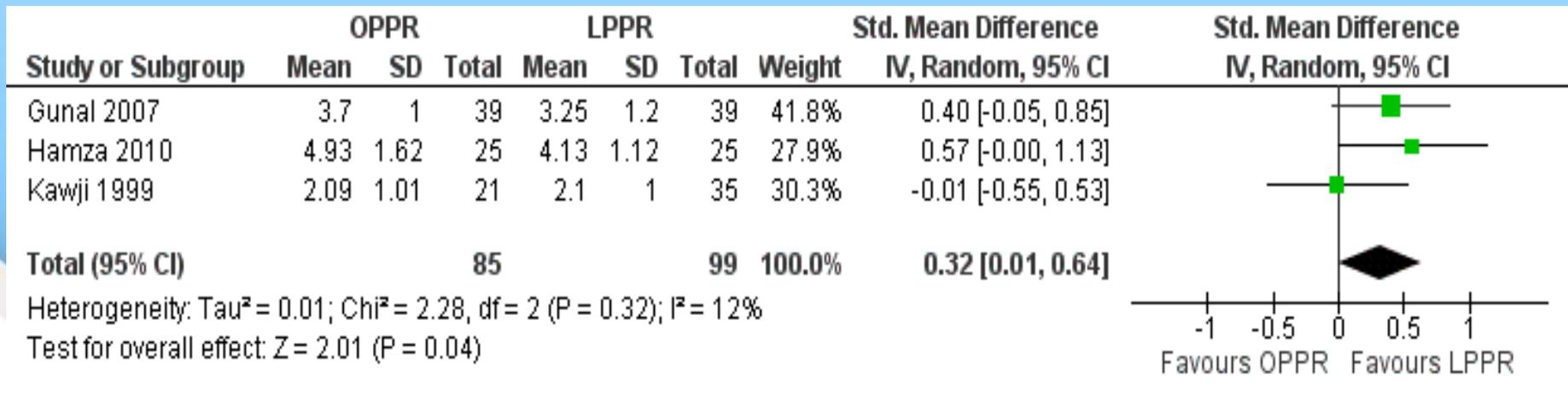
Results - Duration of operation

Duration of operation for OPPR was shorter compared with LPPR (TEP)



Results - Postoperative pain

LPPR (TAPP) was associated with lesser postoperative pain

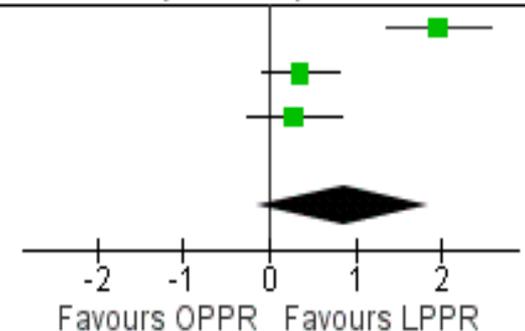


Results - Postoperative pain

LPPR (TEP) was associated with lesser postoperative pain, but it was not statistically significant

Study or Subgroup	OPPR			LPPR			Weight	Std. Mean Difference IV, Random, 95% CI	Std. Mean Difference IV, Random, 95% CI
	Mean	SD	Total	Mean	SD	Total			
Bostanci 1998	3.9	1.44	32	0.96	1.53	32	32.5%	1.95 [1.35, 2.56]	
Gunal 2007	3.7	1	39	3.3	1.2	40	34.4%	0.36 [-0.09, 0.80]	
Hamza 2010	4.93	1.62	25	3.98	4.35	25	33.1%	0.28 [-0.27, 0.84]	
Total (95% CI)			96			97	100.0%	0.85 [-0.14, 1.85]	

Heterogeneity: Tau² = 0.70; Chi² = 21.04, df = 2 (P < 0.0001); I² = 90%
 Test for overall effect: Z = 1.68 (P = 0.09)



Limitations

- Significant differences in inclusion and exclusion criteria among the included RCTs
- Quality of included trials was not good due to inadequate randomization technique, allocation concealment, power calculations, blinding and intention-to-treat analysis
- Randomized, controlled trials with fewer patients in this review may not have been sufficient to recognise small differences in outcomes



Conclusion

- OPPR of inguinal hernia is associated with shorter operative time
- Comparable with LPPR (both total extraperitoneal and trans-abdominal preperitoneal approaches) in terms of:
 - risk of chronic groin pain
 - recurrence
 - complications
 - postoperative pain.



Thank you!

