Laparoscopic versus open TME a reality check

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Penninckx F
on behalf of all participating teams
and the PROCARE Steering Group

FUNDING
for
training (review)
and registration

Foundation against Cancer (2006-2007)

RIZIV / INAMI (2007 – 2012)

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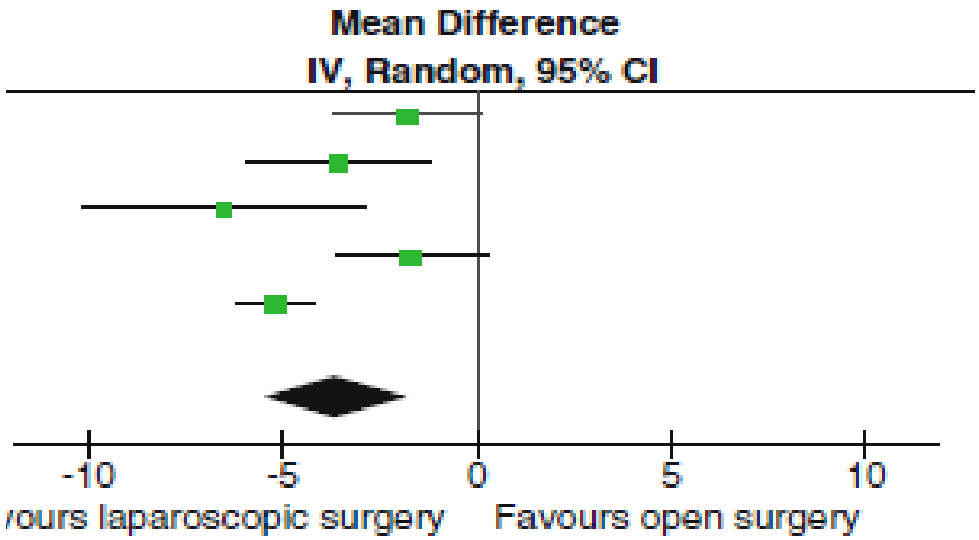
Meta-analysis of 12 RCT's

Ohtani et al. J Gastrointest Surg 2011, 15: 1375-85

Hospital stay

Baik	54 vs 108
Braga	83 vs 85
Gonzalez	20 vs 20
Lujan	101 vs 103
Zhou	82 vs 89



Meta-analysis of 12 RCT's

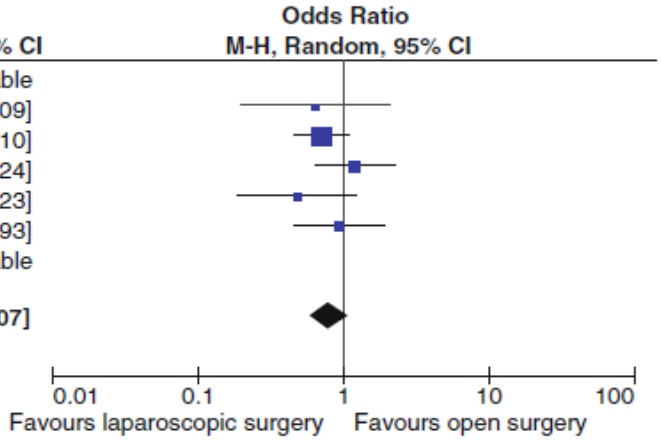
Ohtani et al. J Gastrointest Surg 2011, 15: 1375-85

Overall mortality

Study or Subgroup	laparoscopic surgery Events	Total	open surgery Events	Total	Weight	Odds Ratio M-H, Random, 95% CI
Araujo et al.	0	13	0	15		Not estimable
Baik et al.	4	54	12	108	6.1%	0.64 [0.20, 2.09]
CLASICC	92	253	57	128	45.8%	0.71 [0.46, 1.10]
Lujan et al.	28	101	25	103	21.8%	1.20 [0.64, 2.24]
Ng (low) et al.	12	40	17	36	9.7%	0.48 [0.19, 1.23]
Ng (upper) et al.	22	59	26	67	16.5%	0.94 [0.46, 1.93]
Zhou et al.	0	82	0	89		Not estimable
Total (95% CI)		**602**		**546**	**100.0%**	**0.80 [0.60, 1.07]**
Total events	158		137			

Heterogeneity: Tau² = 0.00; Chi² = 3.33, df = 4 (P = 0.50); I² = 0%

Test for overall effect: Z = 1.51 (P = 0.13)

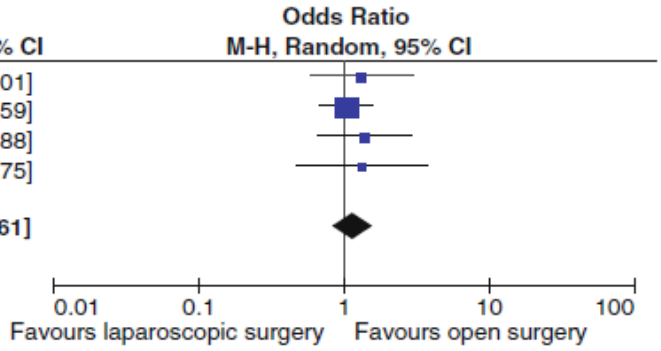


Disease-free survival at 5 years after surgery

Study or Subgroup	laparoscopic surgery Events	Total	open surgery Events	Total	Weight	Odds Ratio M-H, Random, 95% CI
Baik et al.	44	54	83	108	15.2%	1.33 [0.58, 3.01]
CLASICC	135	253	67	128	56.4%	1.04 [0.68, 1.59]
Lujan et al.	86	101	83	103	19.0%	1.38 [0.66, 2.88]
Ng (low) et al.	31	40	26	36	9.4%	1.32 [0.47, 3.75]
Total (95% CI)		**448**		**375**	**100.0%**	**1.17 [0.85, 1.61]**
Total events	296		259			

Heterogeneity: Tau² = 0.00; Chi² = 0.63, df = 3 (P = 0.89); I² = 0%

Test for overall effect: Z = 0.94 (P = 0.35)



Lap versus open TME for mid + low rectal cancer AIMS

- Oncological quality of surgery and survival
- Early postoperative outcome
- Is converted laparoscopy worse than open?

in general surgical practice

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Lap versus open TME in general surgical practice
PATIENTS and METHODS

- PROCARE database with prospective registration on a voluntary basis in Jan 2006 – Oct 2011
- TME for mid + low invasive rectal adca (0 – 10 cm)
- 2660 patients
- 82 / 111 centres

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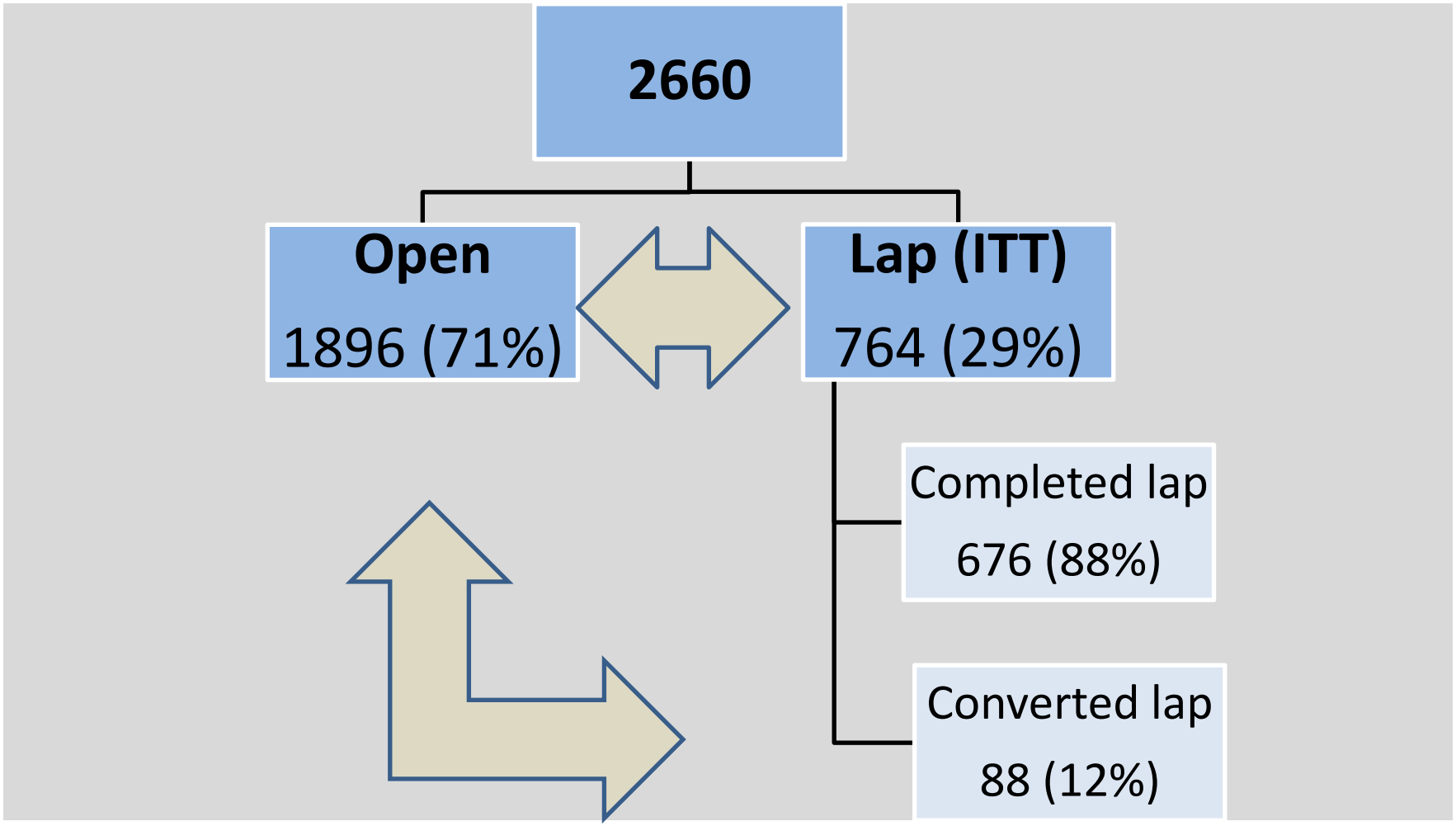
TME for rectal cancer 0 -10 cm from verge



Lap versus open TME in general surgical practice
PATIENTS and METHODS

- TME quality, CRM positivity, 30 d mort., OS, adjusted for
  - age and sex,
  - ASA and BMI,
  - lower limit and circumfer. localisation,
  - (y)pT and (y)pStage,
  - neoadjuvant treatment,
  - TME experience

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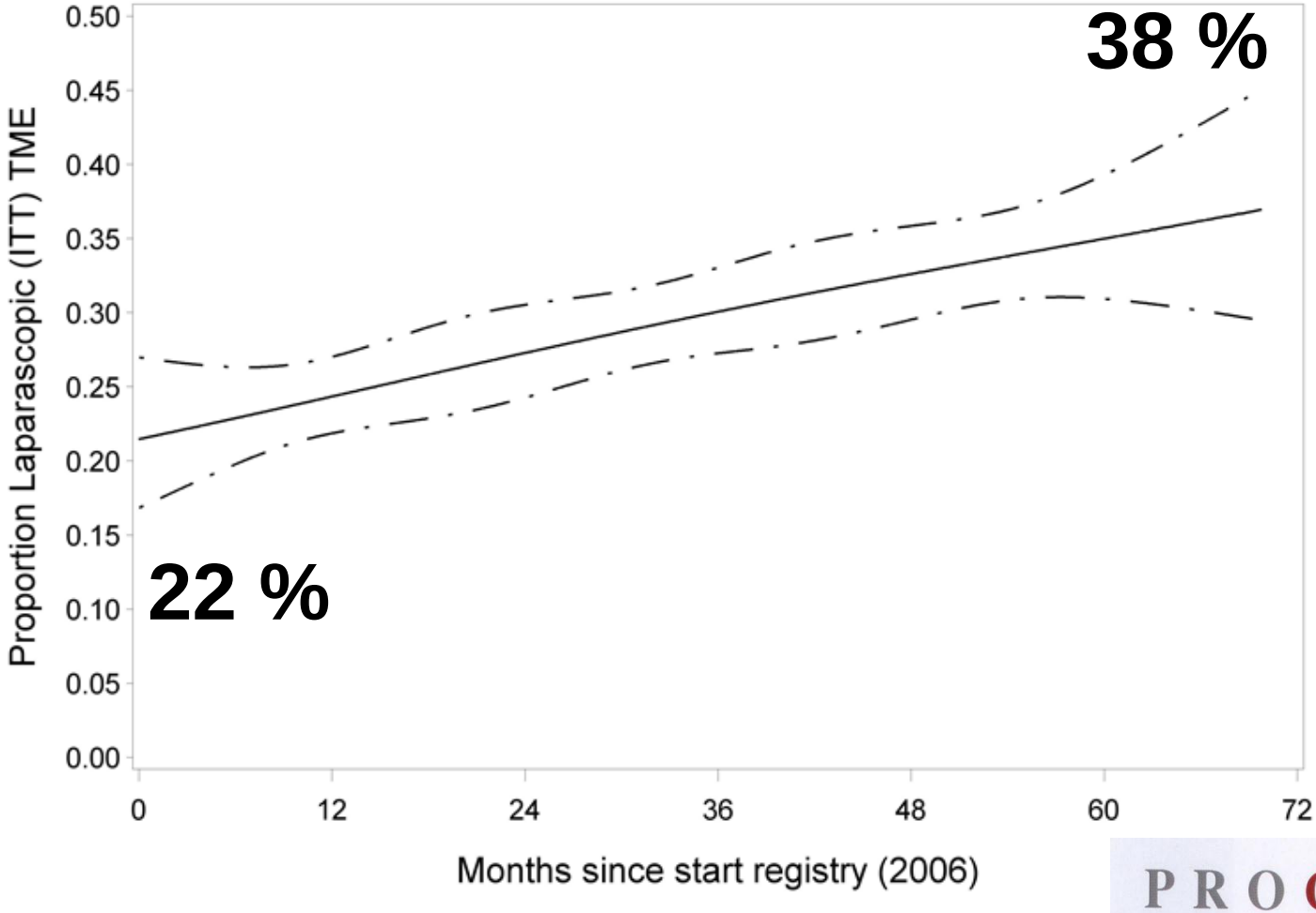
Implementation of lap TME for mid + low RC in general surgical practice



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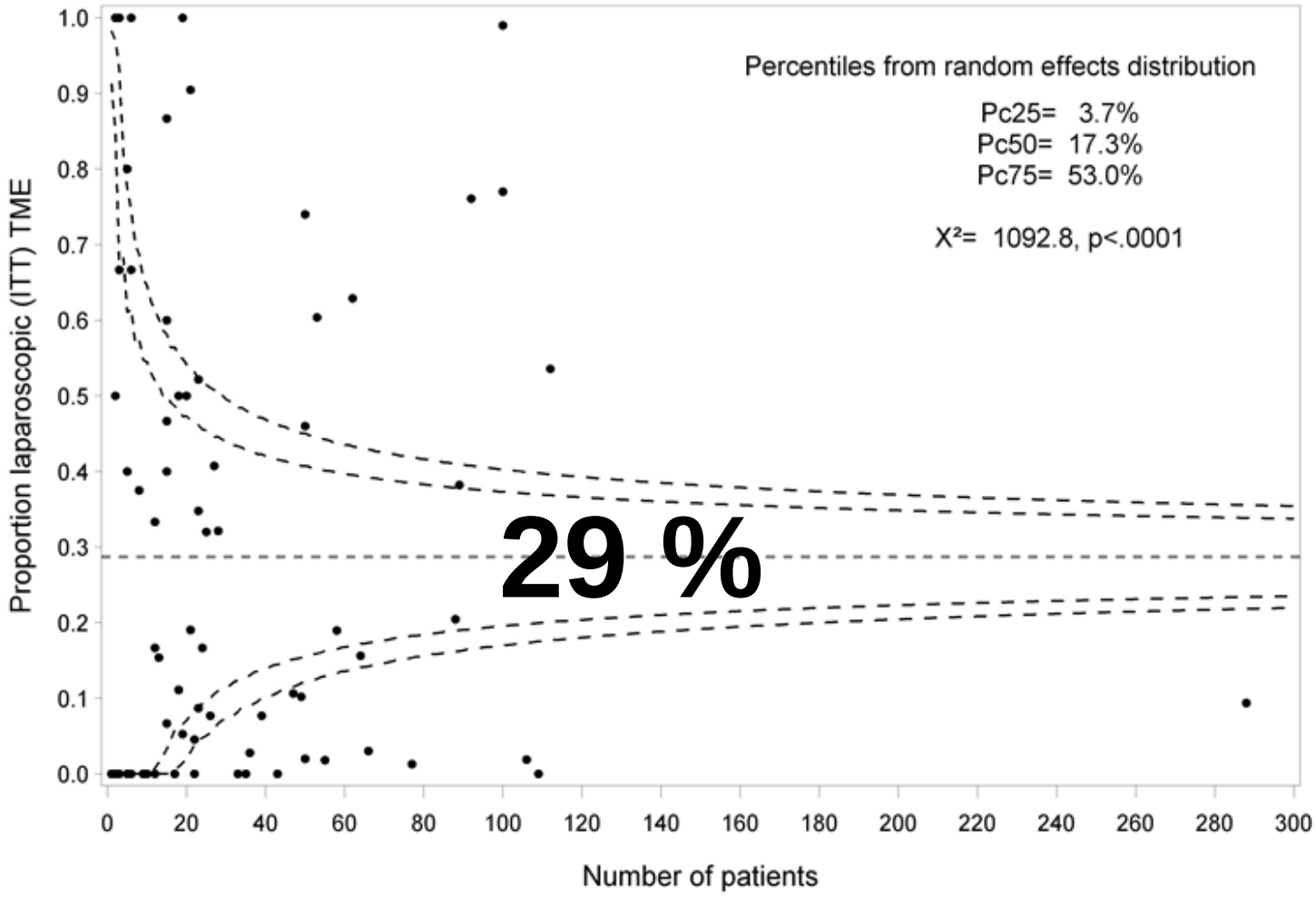
Implementation of lap (ITT) TME for mid + low RC in general surgical practice



no lap (ITT) TME in 25/82 (31%) centres

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Quality of oncological surgery

	OPEN N = 1896	LAP (ITT) N = 764
Musc. propria	11.4 %	13.2 %
(y)pCRM positive	18 % SSO: 12.4 % APE: 27 %	18 % SSO: 15.3 % APE: 26.7 %
Median N of nodes (IQR)	11 (7-15)	11 (7-16)

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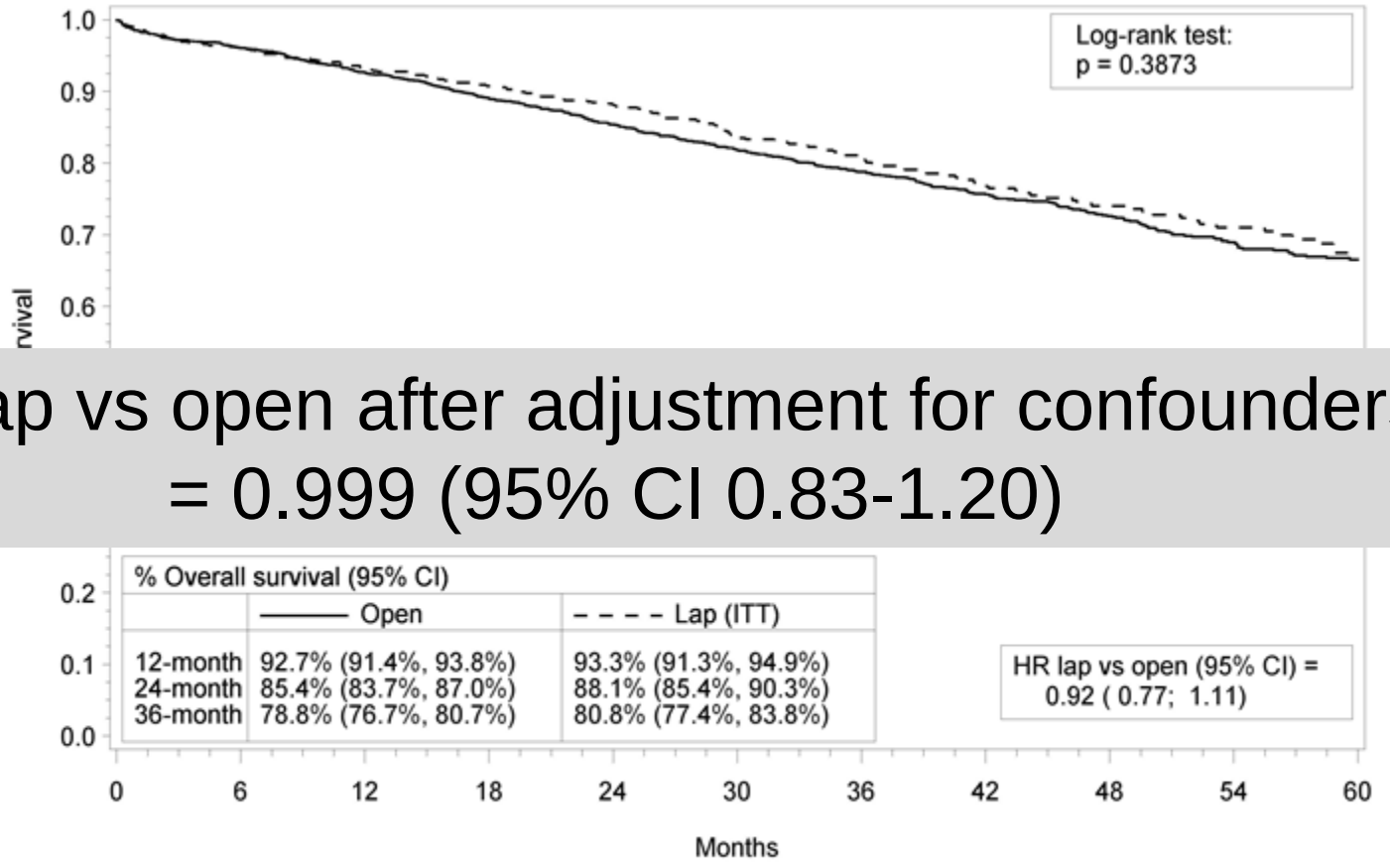
Overall survival after lap (ITT) vs. open TME



HR lap vs open after adjustment for confounders = 0.999 (95% CI 0.83-1.20)

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Early postoperative outcome

	OPEN N = 1896	LAP (ITT) N = 764
APE + HR rate	31 %	31 %
Morbidity any Major morbidity	**41 %** 6 %	**32 %** 7 %
30 d mortality	1.5 %	1.4 %
Median LoS (IQR)	**12 (9-17)**	**10 (8-16)**

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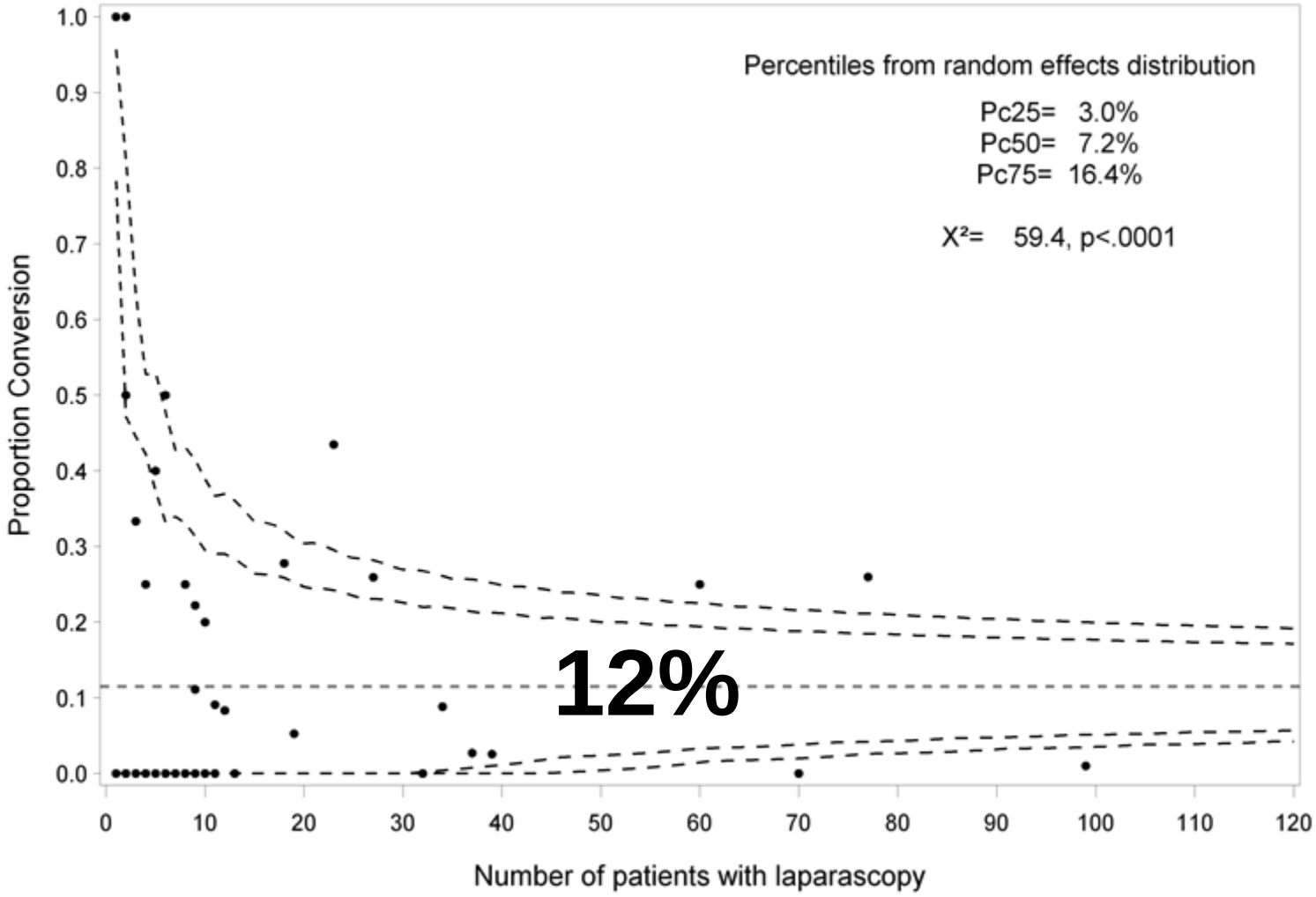
Hospital stay after rectal cancer surgery

MEDIAN (IQR)	OPEN	LAP (ITT)
PROCARE	12 (9-17)	10 (8-16)
England	14 (6-22)	10 (2-18)
ACS NSQIP	7 (5-10)*	5 (4-8)*

* complication rate 21% after lap vs. 29% after open

Faiz et al. Dis Colon Rectum 2009, 52: 1695-1704
Greenblatt et al. J Am Coll Surg 2011, 212: 844-54

Variability in conversion rate



Is converted lap TME worse than open TME? Quality of oncological surgery

	OPEN N = 1896	CONV LAP N = 88
Musc. propria	11.4 %	18 %
(y)pCRM positive	18 %	23 %
Median N of nodes (IQR)	11 (7-15)	12 (8-16)

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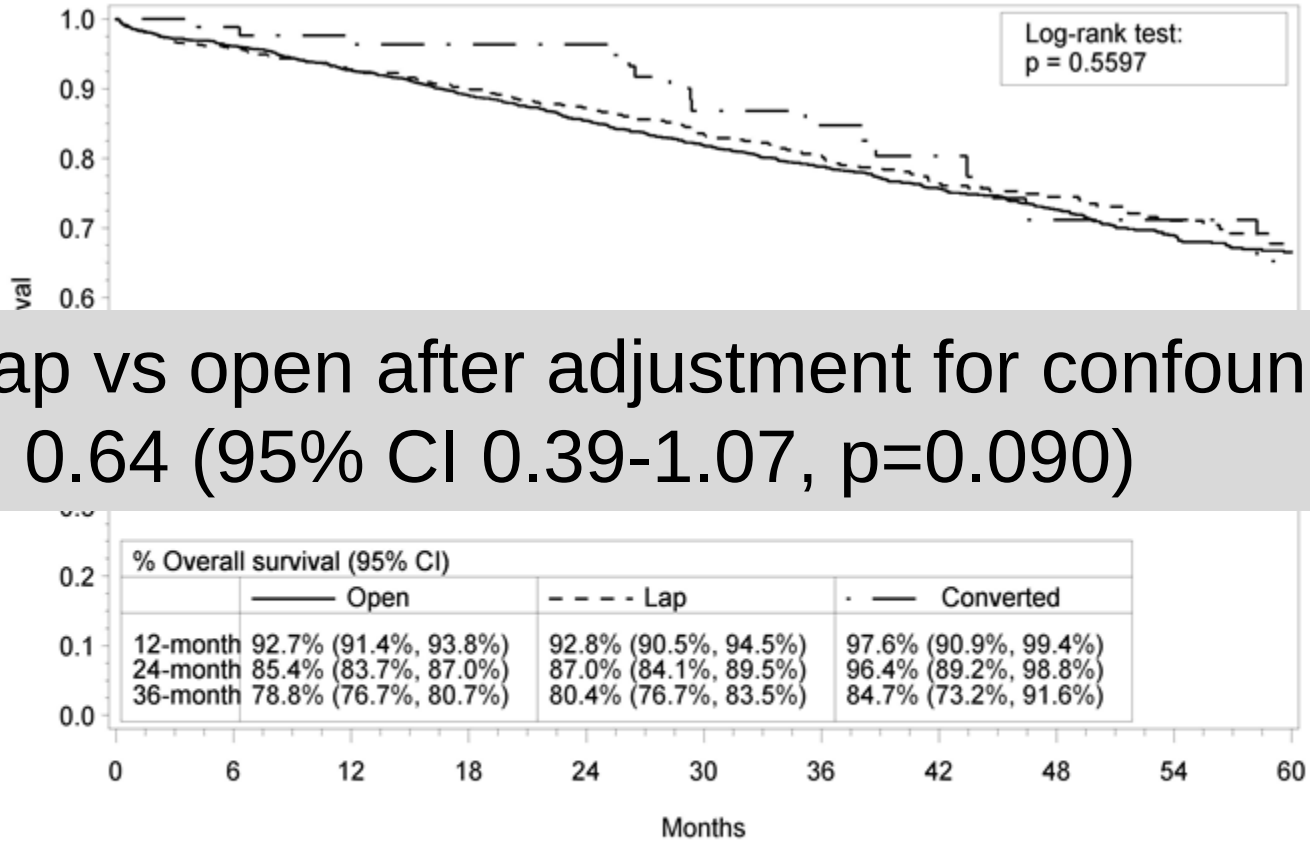
Overall survival after open vs. lap vs. conv lap TME



HR conv lap vs open after adjustment for confounders = 0.64 (95% CI 0.39-1.07, p=0.090)

Number at risk											
Open	1896	1801	1657	1470	1311	1121	944	778	605	443	311
Laparascopy	676	637	580	498	440	368	288	220	169	127	87
Converted	88	82	78	67	62	52	41	31	20	14	8

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Early postoperative outcome

	OPEN N = 1896	CONV LAP N = 88
APE + HR rate	31 %	23 %
Morbidity any Major morbidity	41 % 6 %	41 % 6 %
30 d mortality	1.5 %	0 %
Median LoS (IQR)	12 (9-17)	11 (9-18)

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CONCLUSIONS I

- Open and lap TME are oncol. equivalent in 2660 pts with mid + low RC in general practice
- Converted lap not worse than open TME
- A policy of commencing a lap approach in suitable cases seems to be justified
- Early benefits of lap TME

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CONCLUSIONS II

- Lap TME rate is not a QCI in RC surgery
- Open TME remains the best route to succesful treatment for many surgeons
- Lap TME requires
  - good patient selection
  - meticulous technique
  - experience/skills

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Thanks