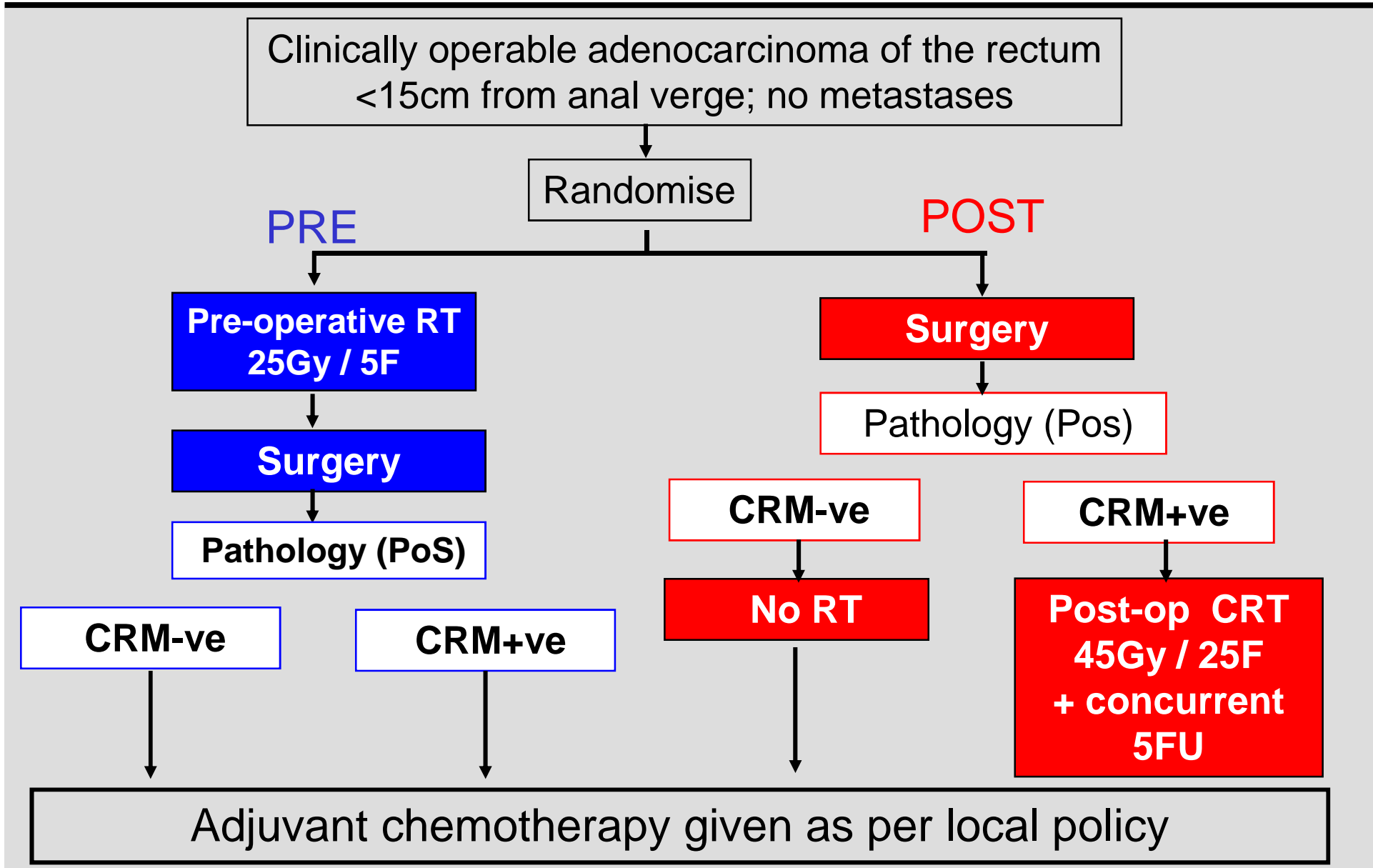


The rate of local recurrence after rectal cancer resection is strongly related to the plane of surgical dissection and is further reduced by pre-operative short course radiotherapy.

Preliminary results of the Medical Research Council (MRC) CR07 trial

Phil Quirke, D Sebag-Montefiore, R Steele, J Couture, R Grieve,
S Khanna, J Monson, Lindsay Thompson
on behalf of the trial investigators the UK NCRI colorectal cancer
study group and NCICanada

Trial Design



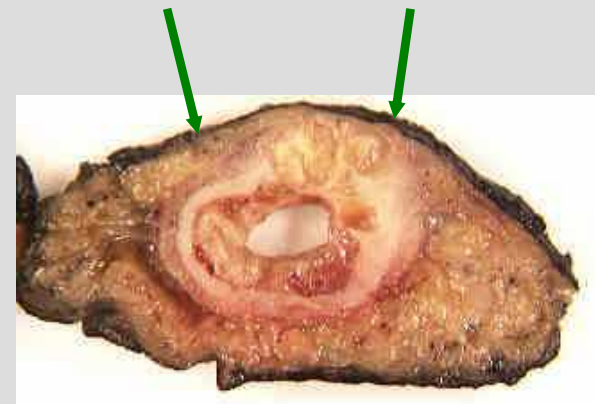
Key questions

In terms of local recurrence,
how important is:

- The surgical circumferential margin (CRM)?
- The plane of surgical dissection?
- Short course pre-operative radiotherapy?

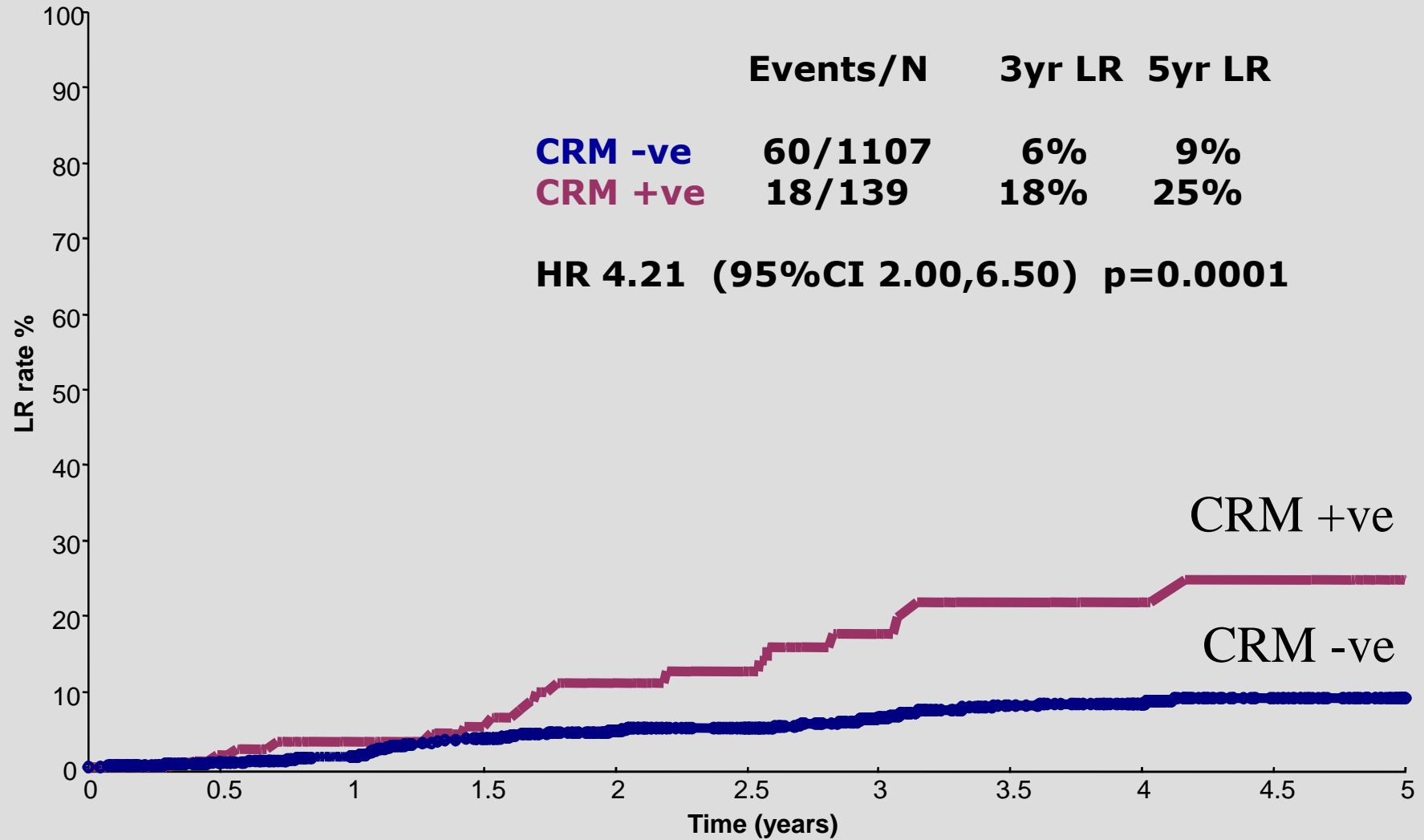
High quality pathology

- Prospective
- Protocol defined specimen dissection and written proforma reporting
- Individual pathology training days and central approval
- Standardised pathology
 - circumferential margin
 - TNM version 5

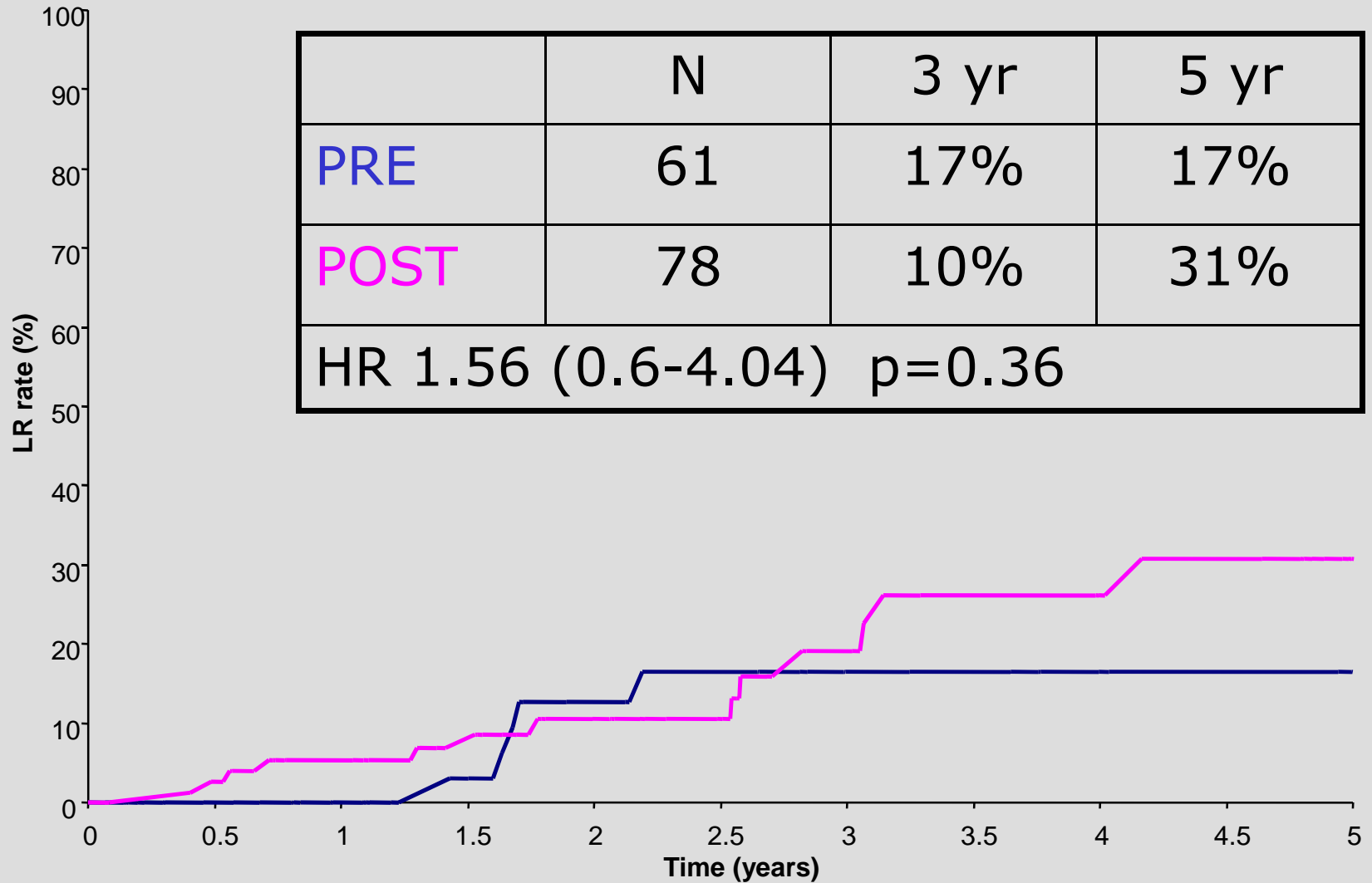


CRM +ve $\leq 1\text{mm}$

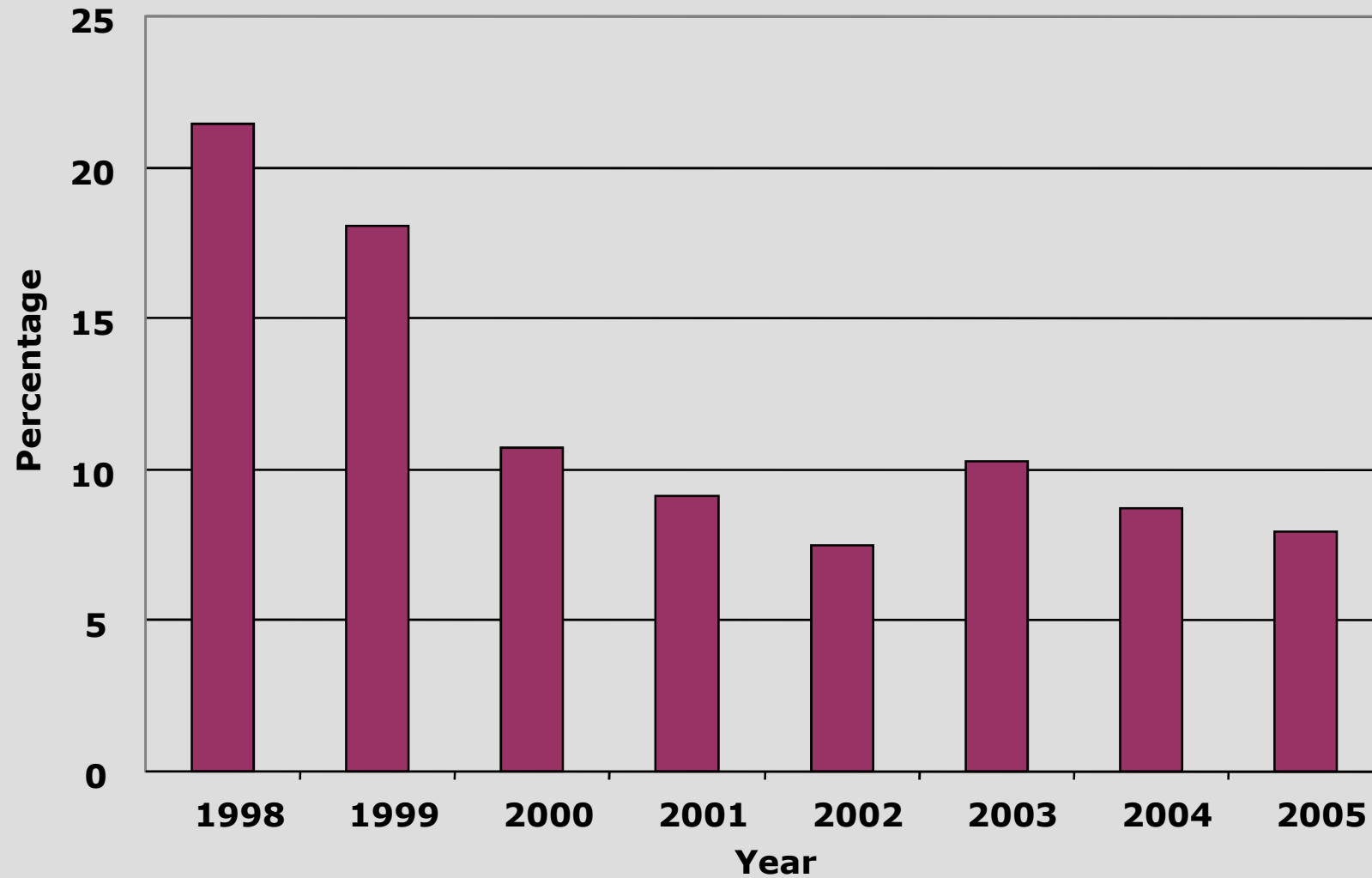
LR by CRM status (all patients)



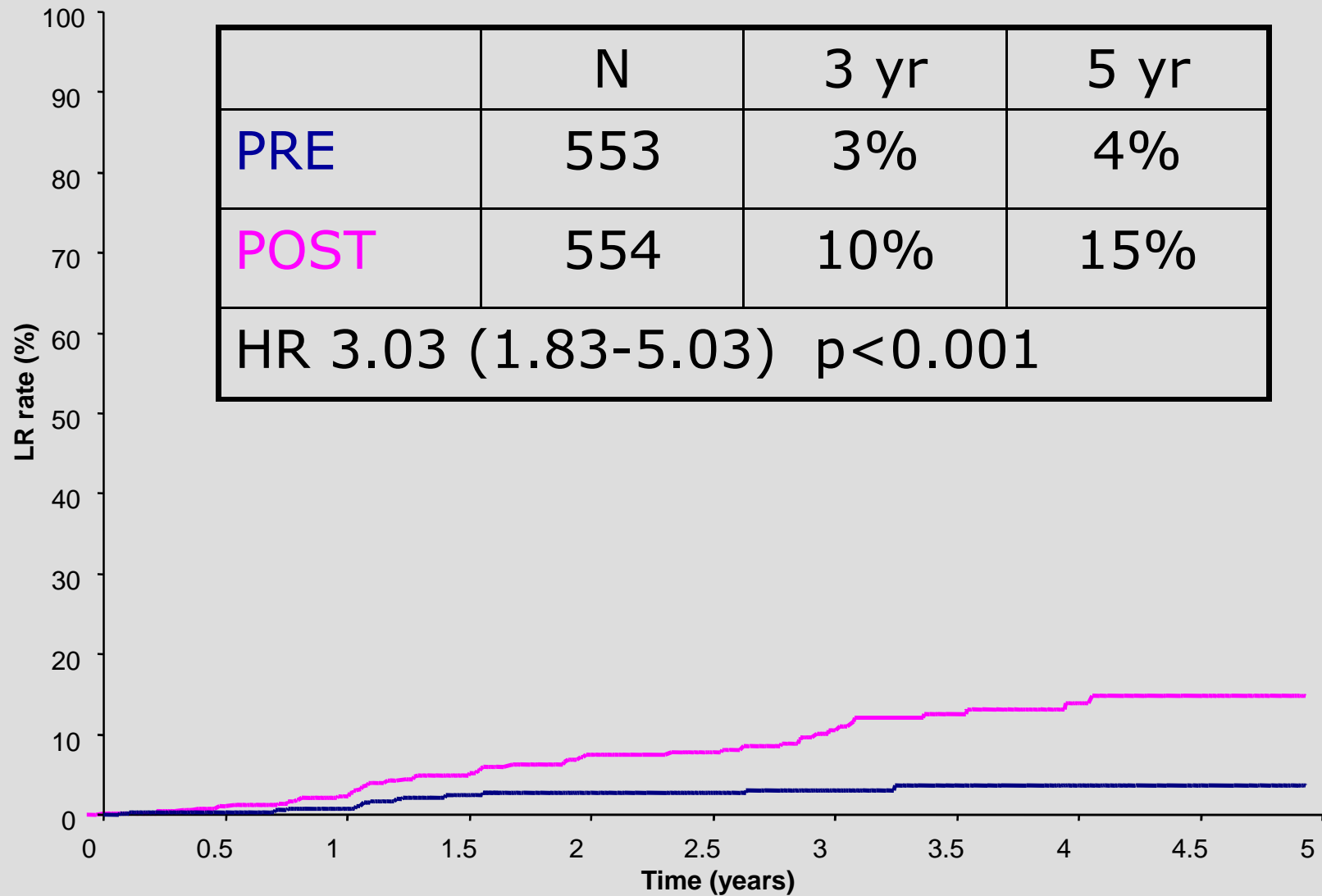
LR by treatment arm CRM+ve



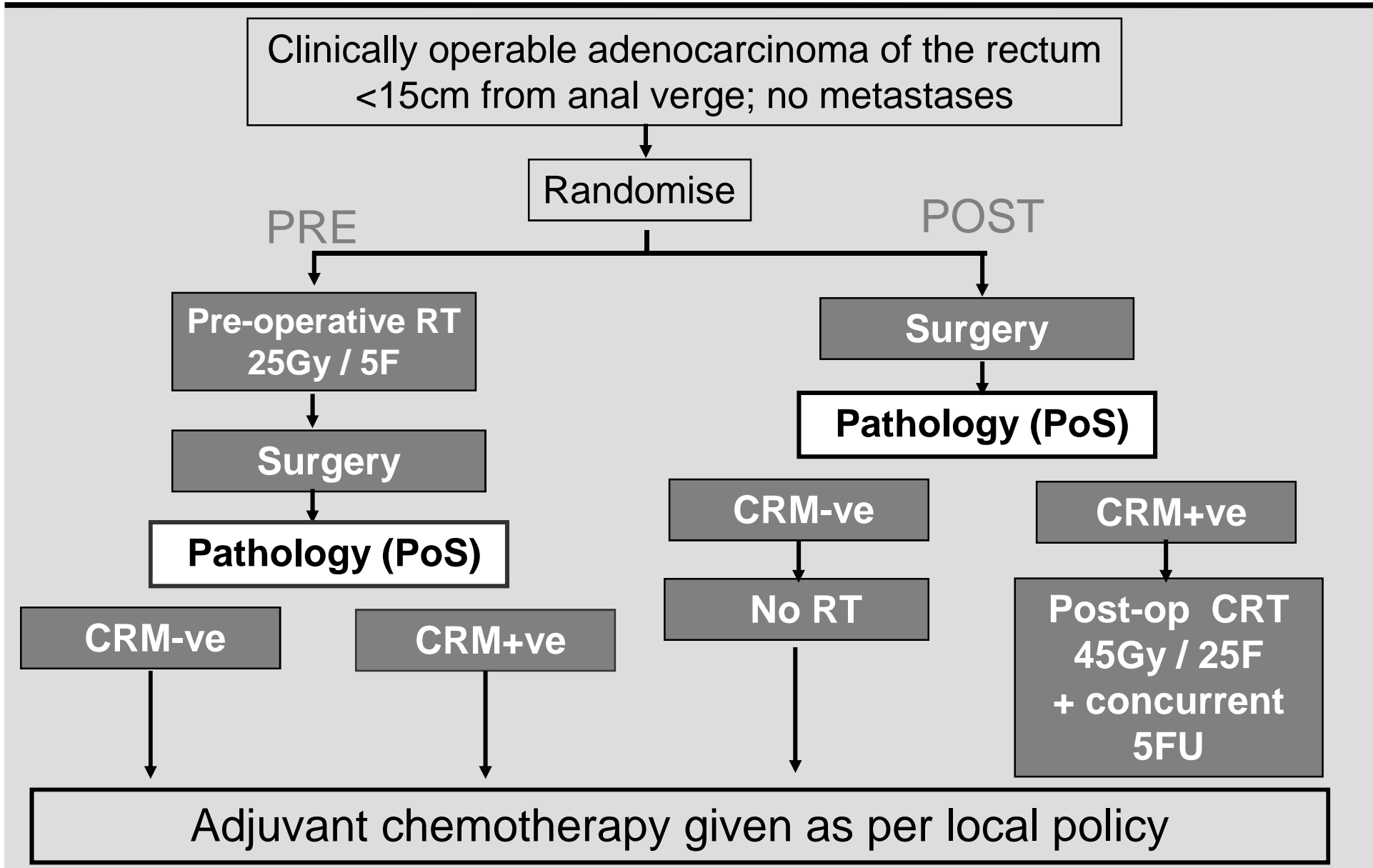
CRM+ve rate by year



LR by treatment arm CRM-ve



Trial Design



Abbreviated definitions of surgical plane (predefined and prospectively graded)

Mesorectal plane: intact mesorectum with only minor irregularities of a smooth mesorectal surface. No defect deeper than 5mm. No coning, smooth CRM on slicing

Intramesorectal plane: Moderate bulk to mesorectum but irregularity of the mesorectal surface. Moderate distal coning. Muscularis propria not visible with the exception of levator insertion. Moderate irregularity of CRM

Muscularis propria plane: Little bulk to mesorectum with defects down onto muscularis propria and/or very irregular CRM

Plane of surgery n=1119 (83%)



Mesorectal

n=596

53%



Intra-mesorectal

n=382

34%



Muscularis propria

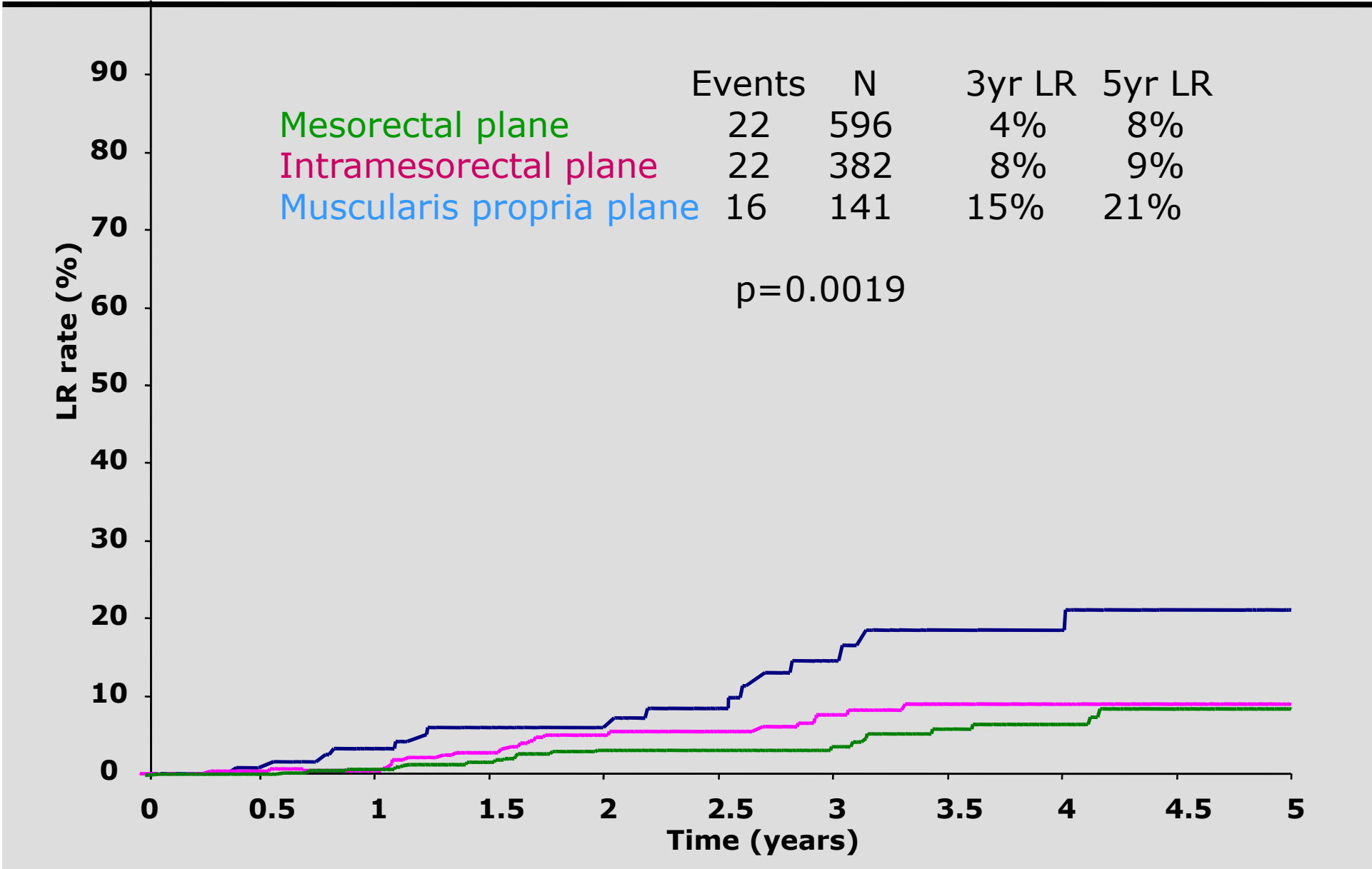
n=141

13%

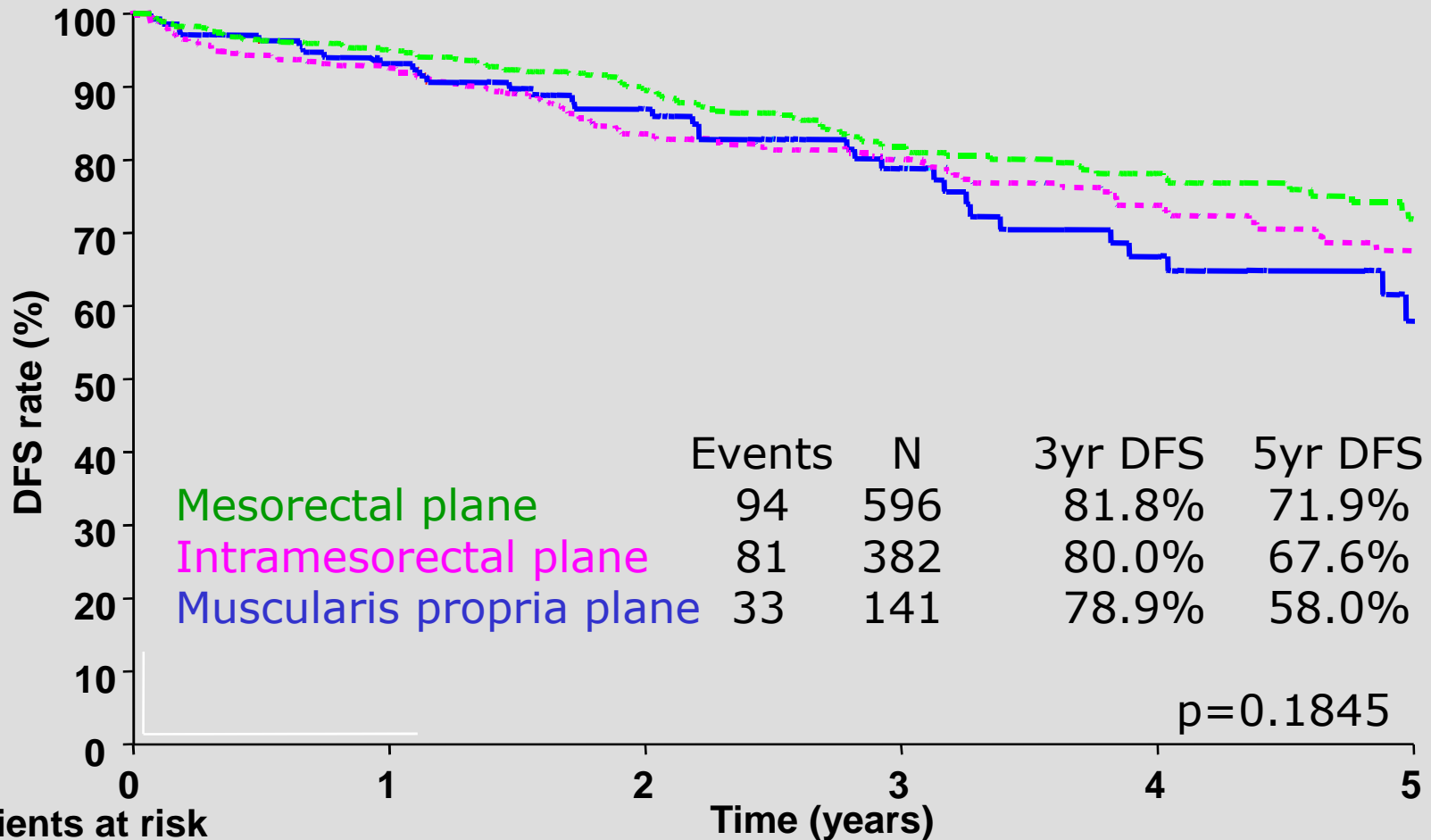
Associations with plane

	Mesorectal	Plane Intra- mesorectal	Muscularis propria
CRM +ve rate	9%	12%	19%
Stage I	28%	24%	28%
Stage II	26%	32%	30%
Stage III	46%	45%	42%

LR by plane of surgery



DFS by plane of surgery



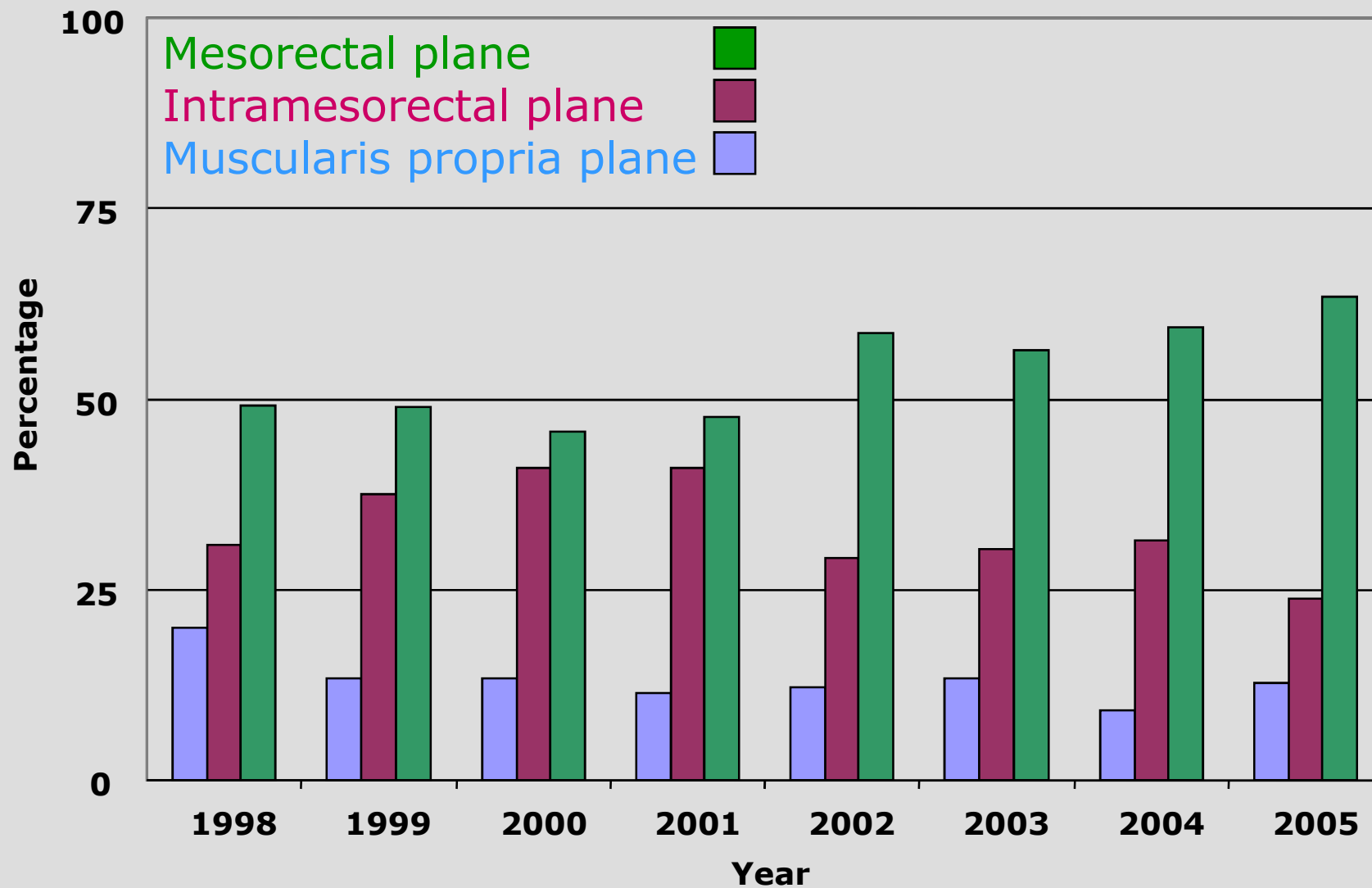
Patients at risk

Time (years)	0	1	2	3	4	5
Mesorectal plane	596	461	331	222	128	55
Intramesorectal plane	382	303	232	169	110	49
Muscularis propria plane	141	113	87	56	35	14

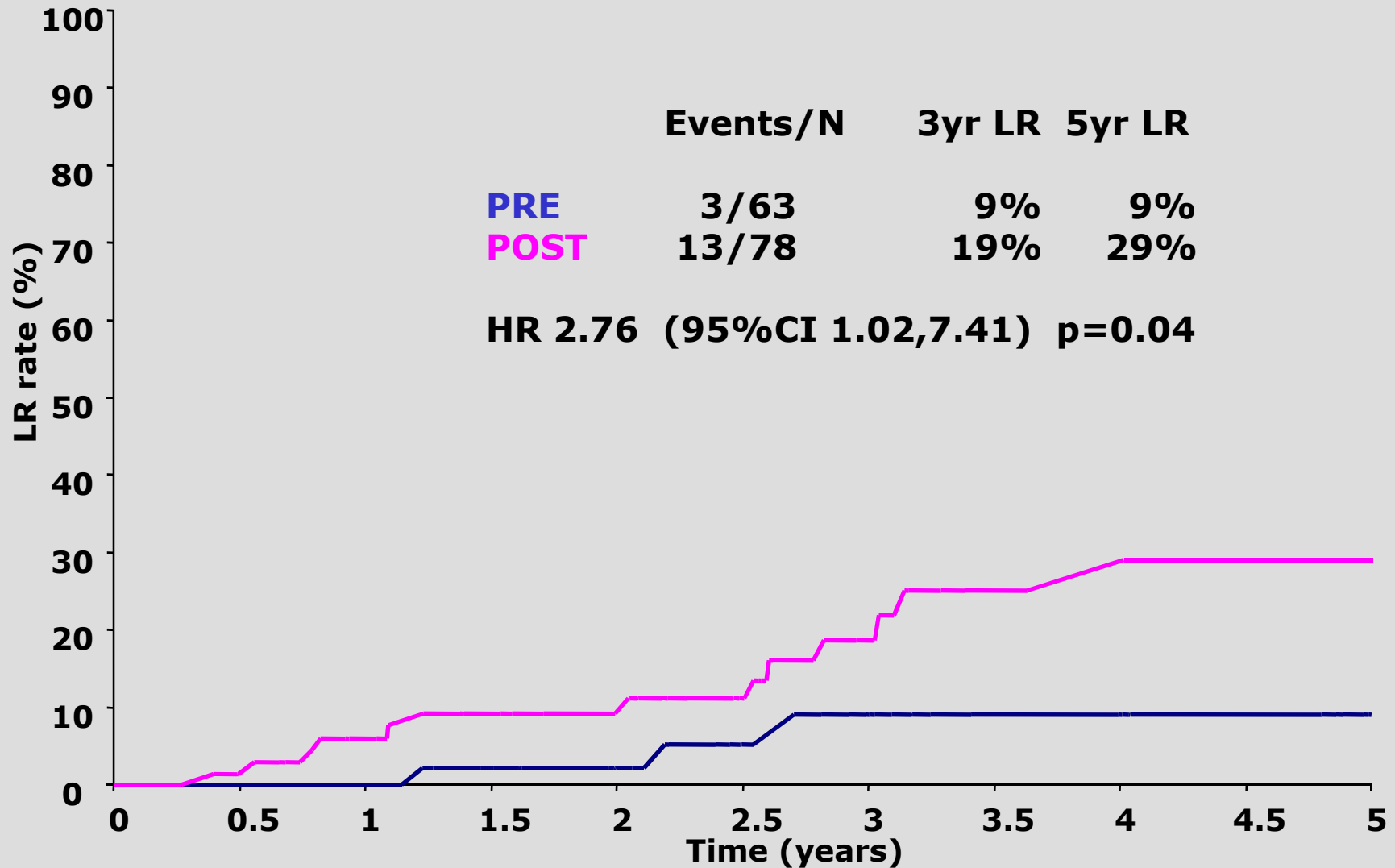
LR by CRM and plane

	Events	N	3yr LR	5yr LR
<hr/>				
CRM -ve				
Mesorectal plane	18	537	3%	8%
Intramesorectal plane	17	331	7%	8%
Muscularis propria plane	11	113	12%	17%
<hr/>				
CRM +ve				
Mesorectal plane	4	50	9%	19%
Intramesorectal plane	5	45	14%	21%
Muscularis propria plane	5	27	26%	36%
<hr/>				

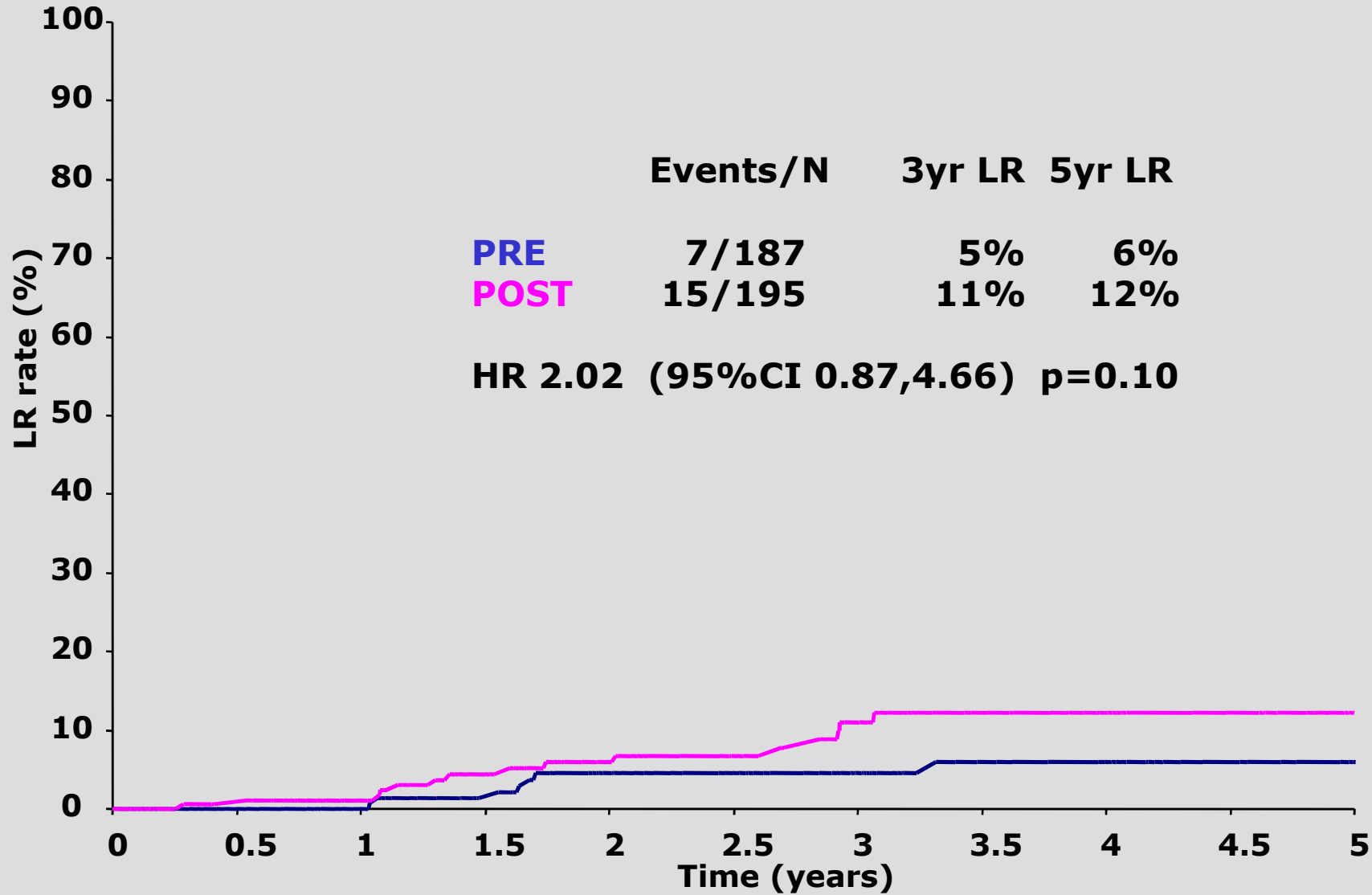
Plane of surgery by year



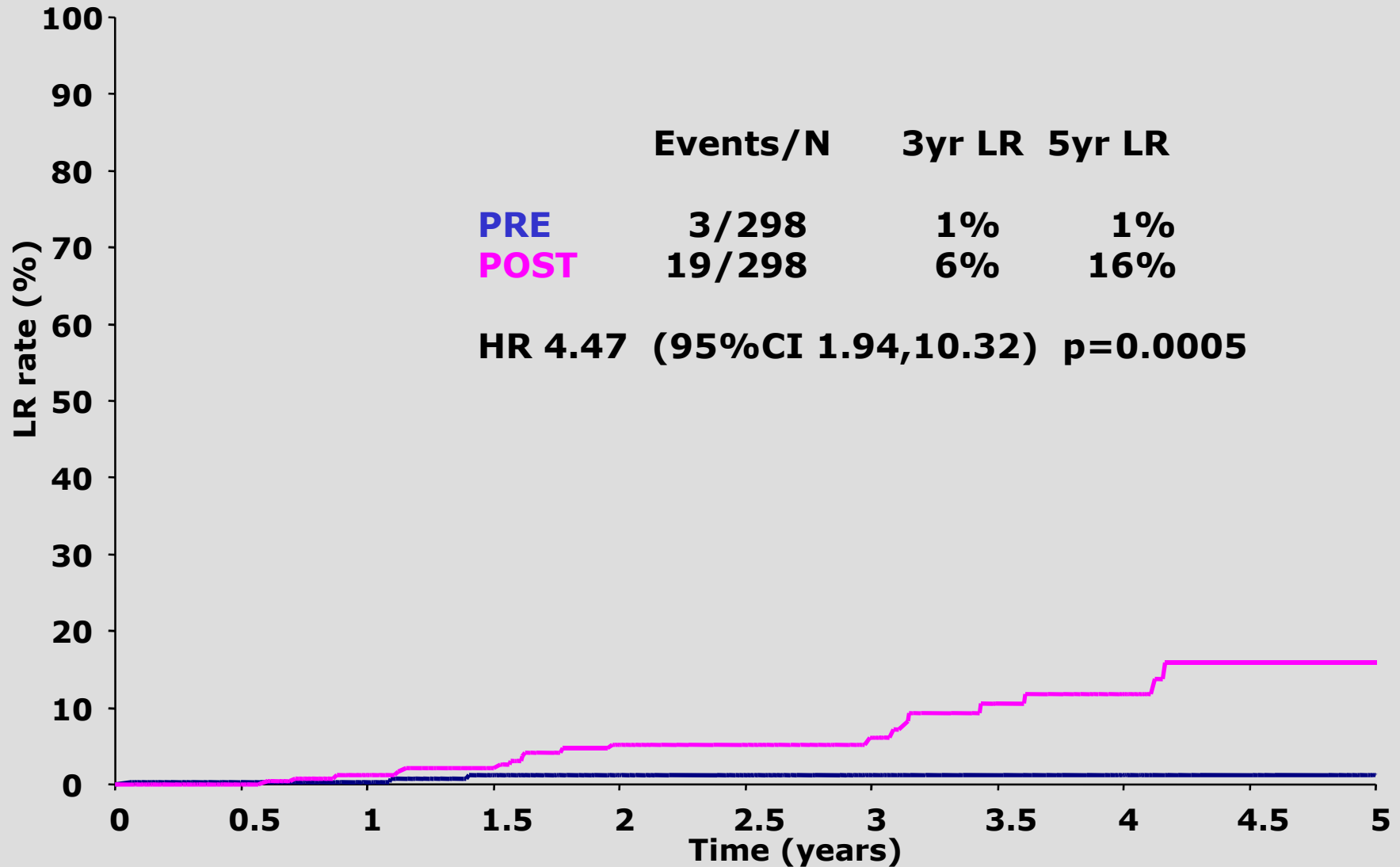
LR rate of muscularis propria plane by treatment arm



LR rate of intramesorectal plane by treatment arm



LR rate by mesorectal plane by treatment arm



Summary

- Local recurrence after rectal cancer resection is predicted by the circumferential resection margin
- Local recurrence is strongly related to the plane of surgical dissection – surgical skill is very important
- The benefit for short course pre-operative radiotherapy (PRE) is seen for all planes of dissection
- Local recurrence is virtually eliminated with best surgery (mesorectal plane) dissection and short course pre-operative radiotherapy (PRE)

Acknowledgements

- CR07 surgeons and pathologists
- The patients
- Trial Management Group
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- DMEC and TSC
 - John Northover / Malcolm Mason (chairs)
- MRC CTU
 - Richard Stephens, Anne Holliday,
 - Sarah Beall, Lindsay Thompson
 - Gareth Griffiths, Shama Hassan