

Locally advanced rectal cancer approach

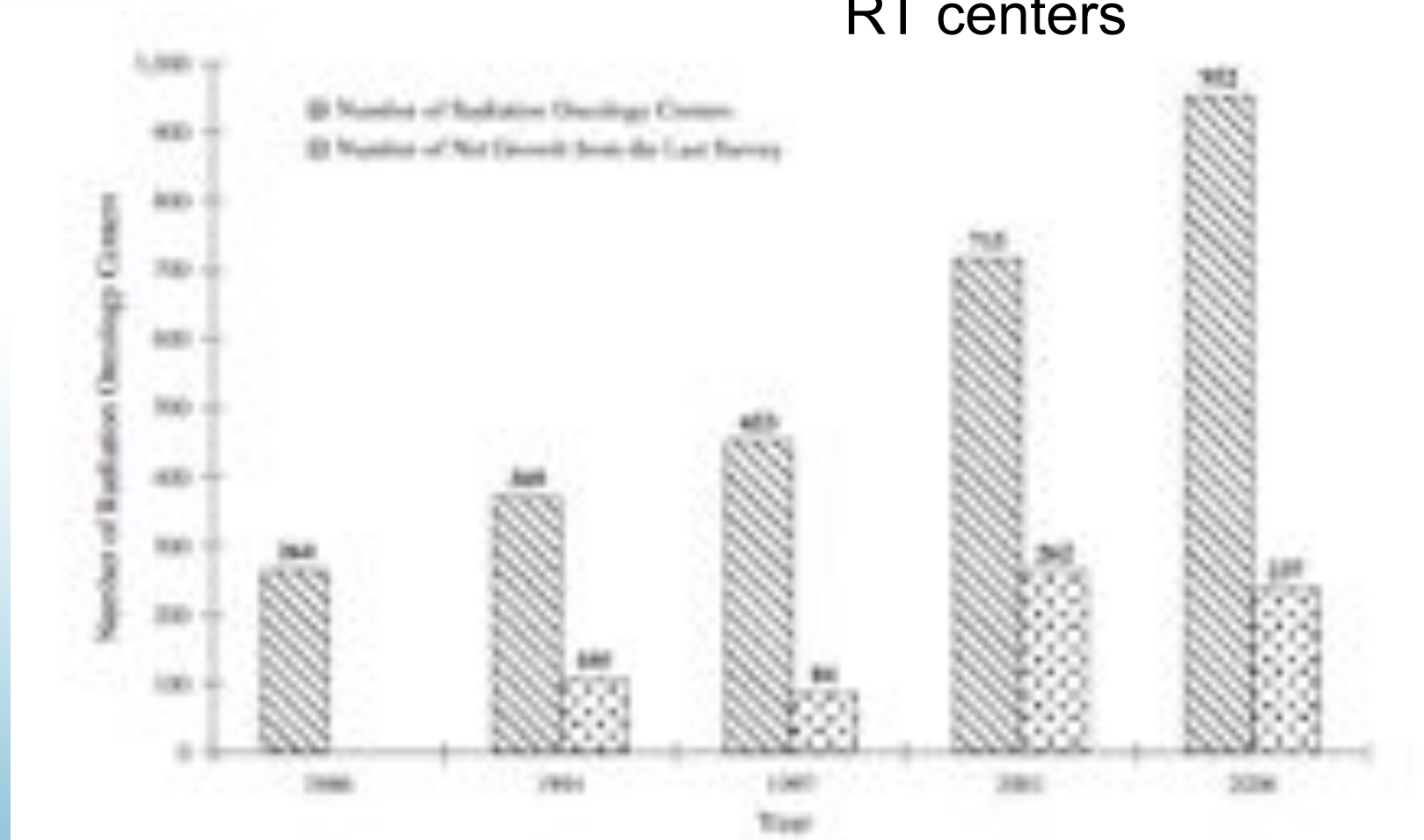
-- Fudan experience

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Survey of RT status in China

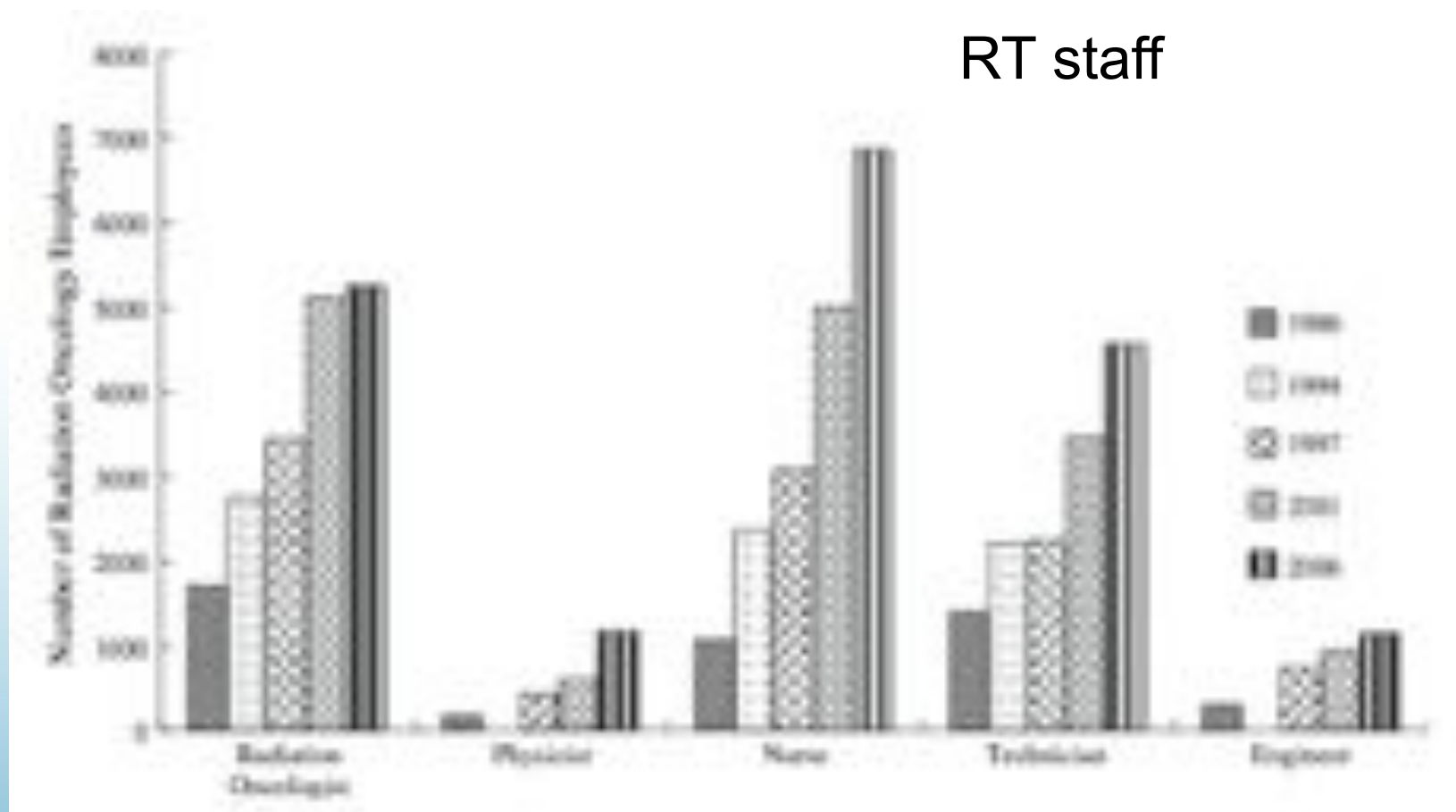
RT centers



Yin WB, IJROBP (70):795, 2008

Survey of RT status in China

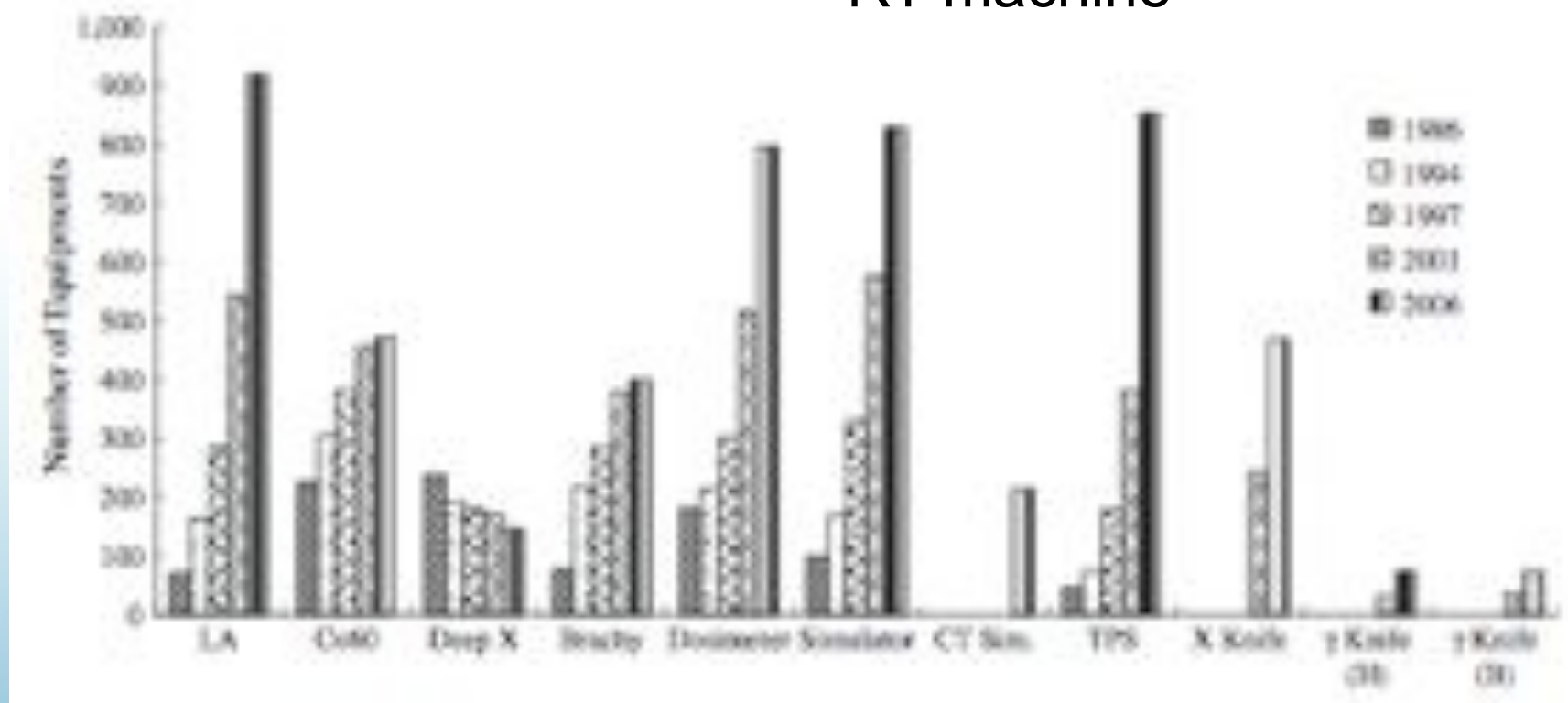
RT staff



Yin WB, IJROBP (70):795, 2008

Survey of RT status in China

RT machine

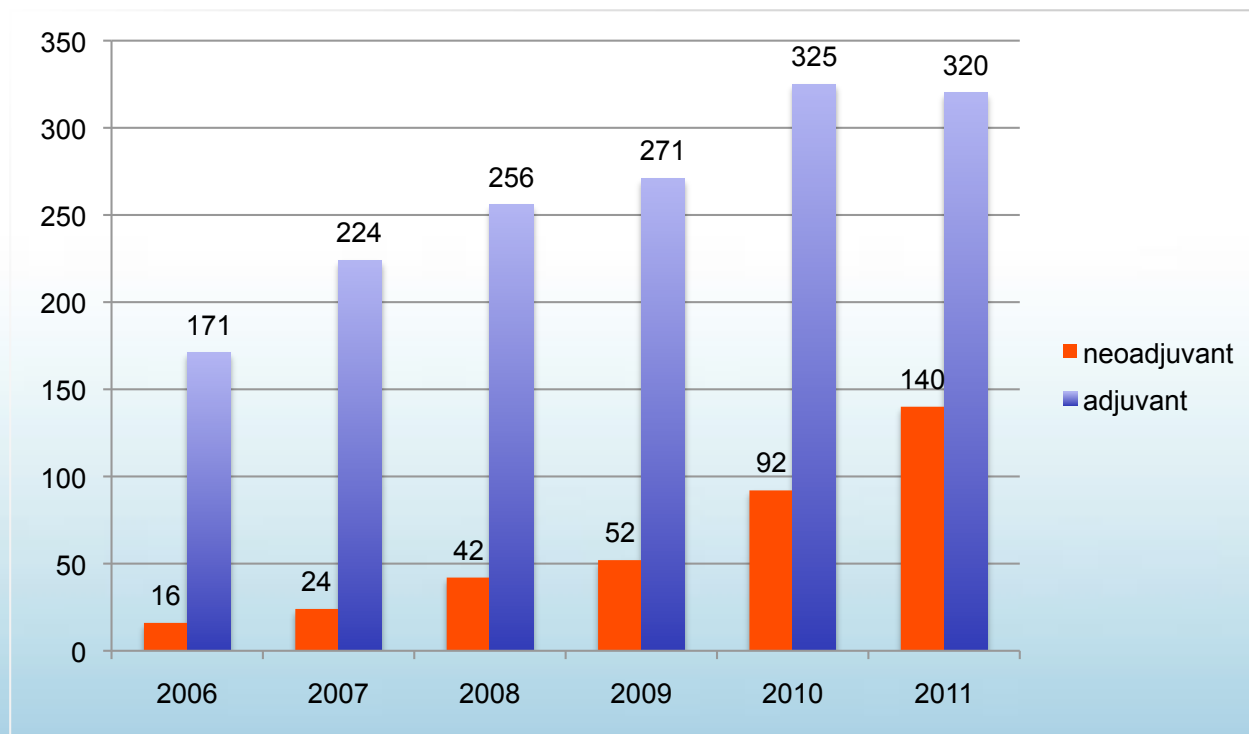


Yin WB, IJROBP (70):795, 2008

Patients categories

- Treatment aim
 - Neoadjuvant
 - Adjuvant
 - Recurrent
 - Stage IV

Rectal cancer patient number 2006-2010



Treatment schedule

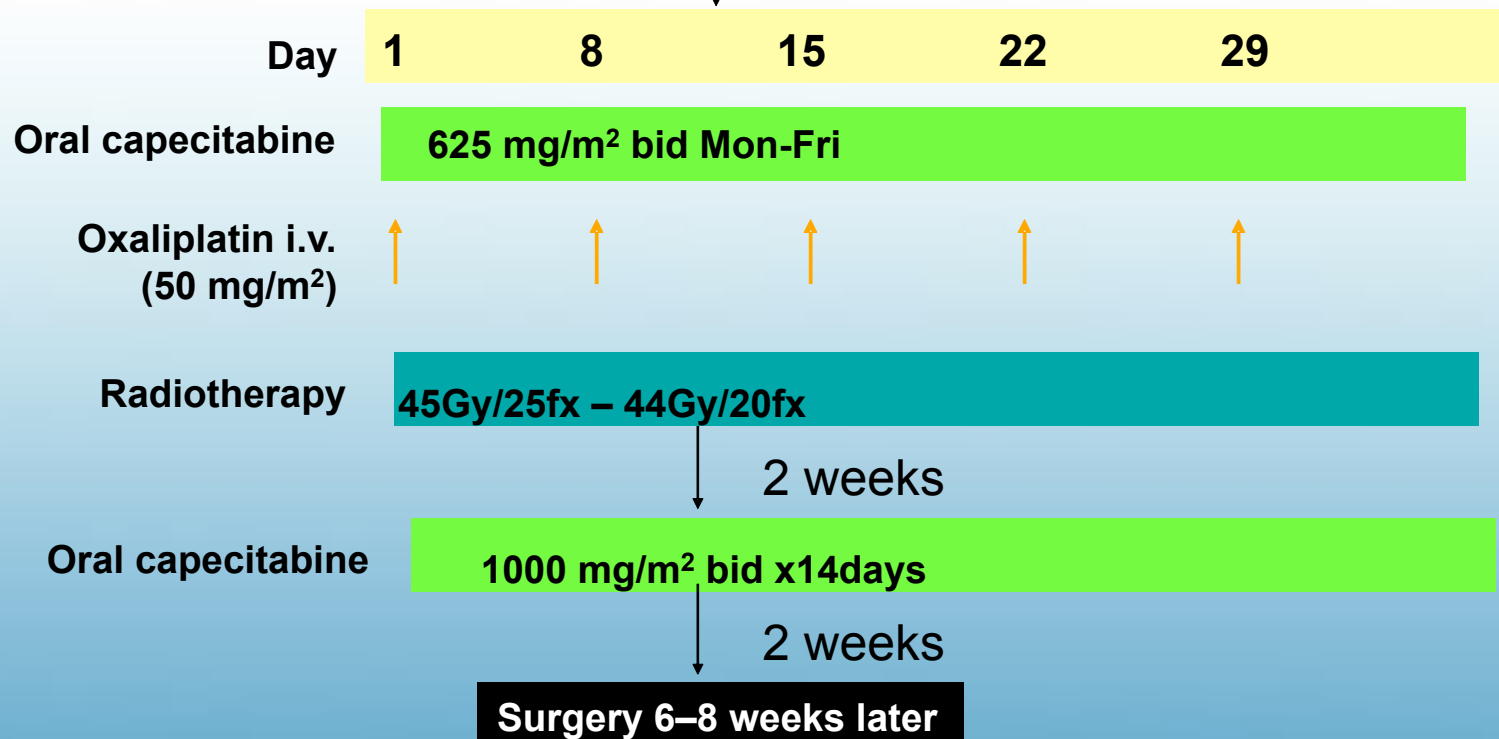
Histologically proven locally advanced T3/T4 rectal carcinoma

Age: 18-75 years

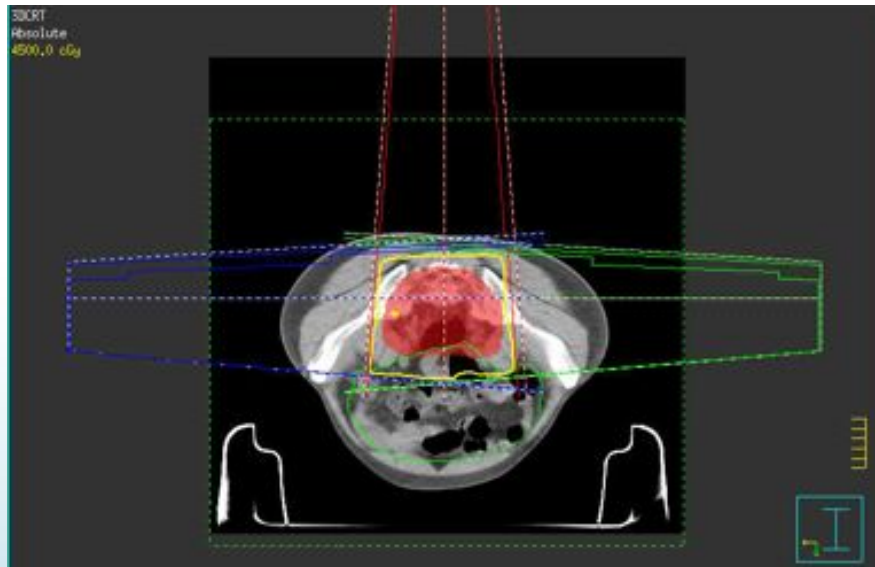
ECOG performance status: 0-1

Life expectancy >6 months

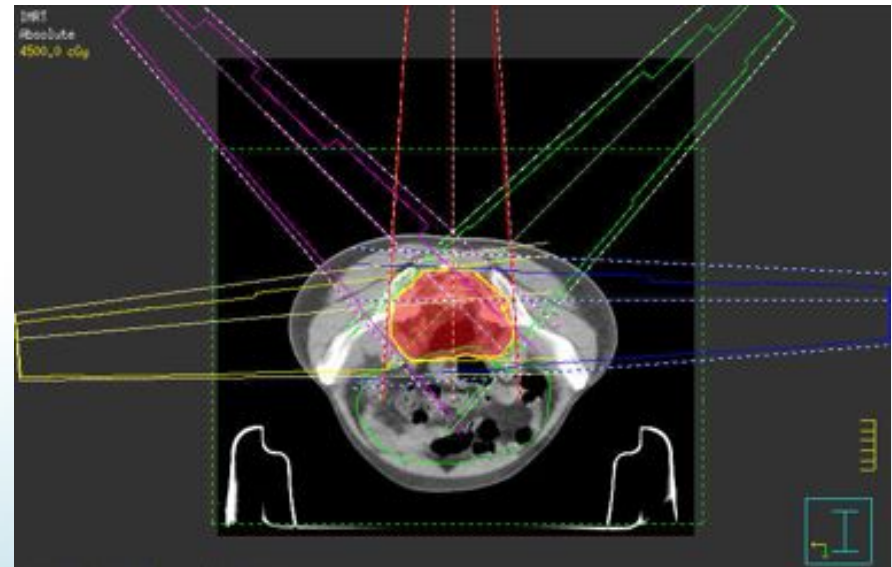
Eligible for study



IMRT vs 3D

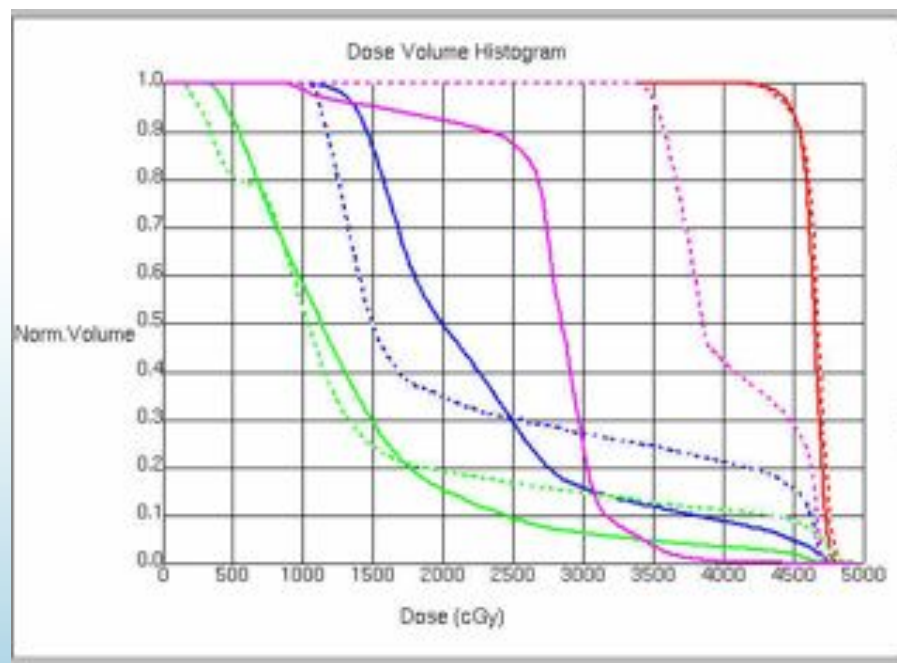


3D



IMRT

IMRT vs 3D



	3DCRT	IMRT	p
Small bowel			
V45 (cc)	114.1+/-9.4	48.7+/-17.5	<0.01
V40 (cc)	139.2+/-14.9	67.3+/-18.6	<0.01
V35 (cc)	162.7+/-11.9	95.9+/-44.0	<0.01
Femal head			
V45 (%)	17.2+/-4.0	0.8+/-0.5	<0.01
V40 (%)	28.0+/-2.2	3.4+/-2.2	<0.01
bladder			
V45 (%)	29.0+/-8.7	12.9+/-4.2	<0.01
V40 (%)	40.6+/-7.6	23.2+/-4.1	<0.01

Neoadjuvant CRT

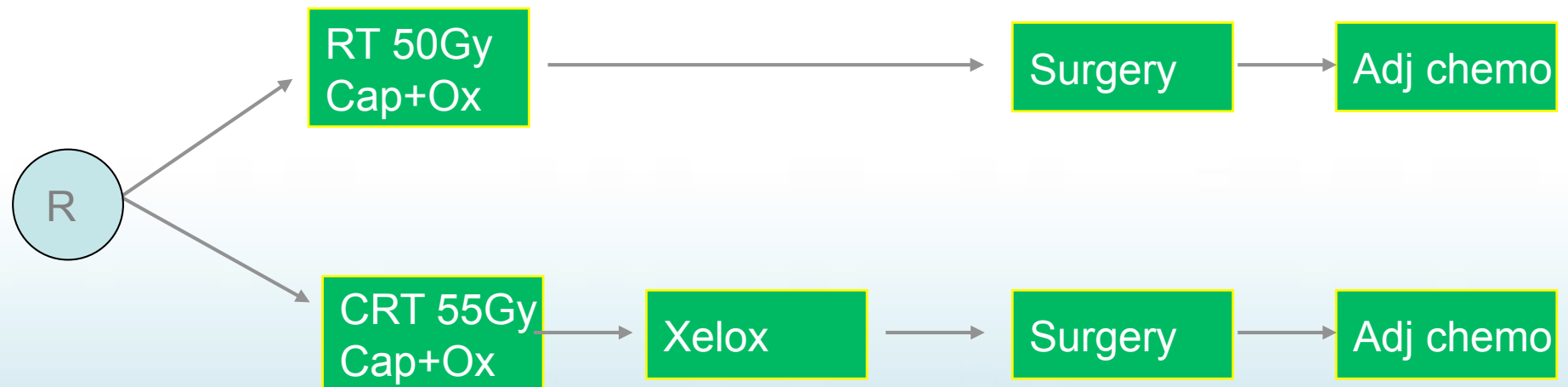
- 3rd period

**An Open Label, Randomized, Multi-center,
Phase II/III Trial of High Intensity Versus
Low Intensity Neoadjuvant
Chemoradiotherapy With IMRT in Local
Advanced Rectal Cancer**

Zhang Z , Zhu J, Cai G, Xu Y, Shen WQ, Cai SJ

NCT01064999

Treatment schema



NCT01064999

Preliminary result

- 120 patients
 - Arm (50): pCR:11%
 - Arm (55): pCR: 20% ($p=0.187$)
 - pCR +TRG 1(almost pCR):
 - 35.5%(50) vs 60% (55), ($p=0.008$)
- Toxicities:
 - Diarrhea 13% vs 14%
 - Skin: 20% vs 21%

Outcome

II/III	2000-2005 Adjuvant	2006- Neoadjuvant
3-y LR	14.8%	5%
3-y OS	74.2%	77.1% (pCR 84%)
Diarrhea (III)	19%	13%-18%
leakage	8%	6.7%

RT dose and pCR

Total dose	Per fraction	pCR
45Gy	1.8Gy	10%
44Gy	2.2Gy	18%
50Gy vs 55Gy	2Gy vs 2.2Gy	11% vs 20%

EVALUATION OF RESPONSE

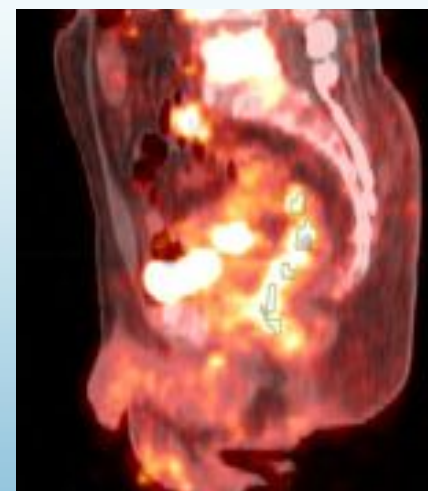
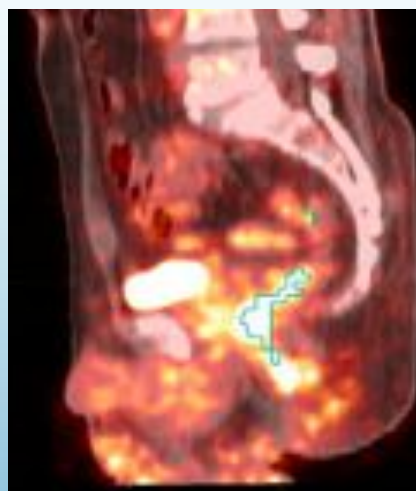
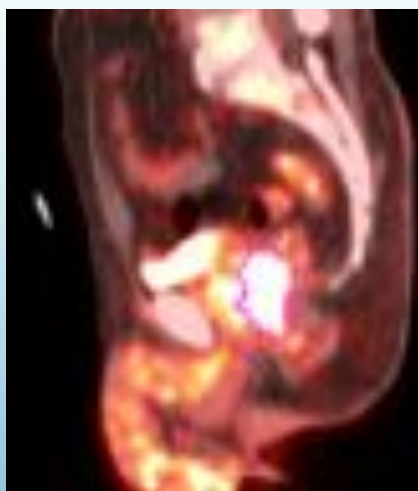
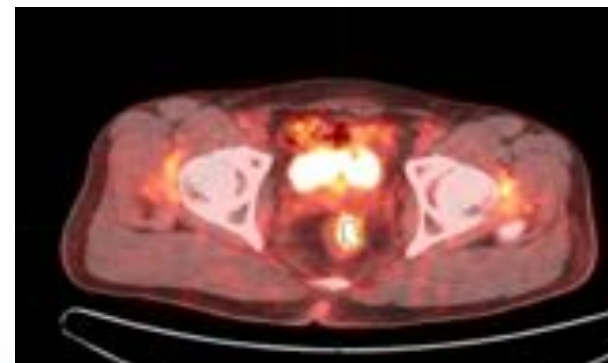
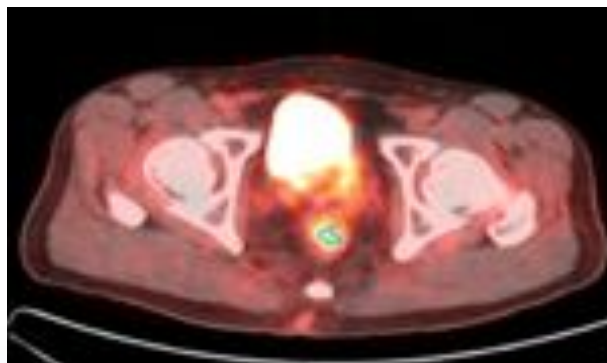
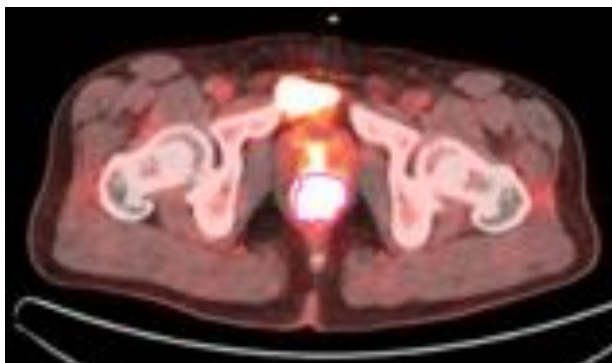
The role of ^{18}F -FDG PET/CT in predicting tumor response after preoperative chemo-radiation therapy for rectal cancer

Sun W, Zhang Z, Xu J, Shen W, Hu W, Zhu J, Cai G,
Gu W, Xu Y, Cai S

Fudan University Shanghai Cancer
Center, Shanghai, China

ASTRO 2011

Tumor contours in 3 different time points for a patient with rectal cancer

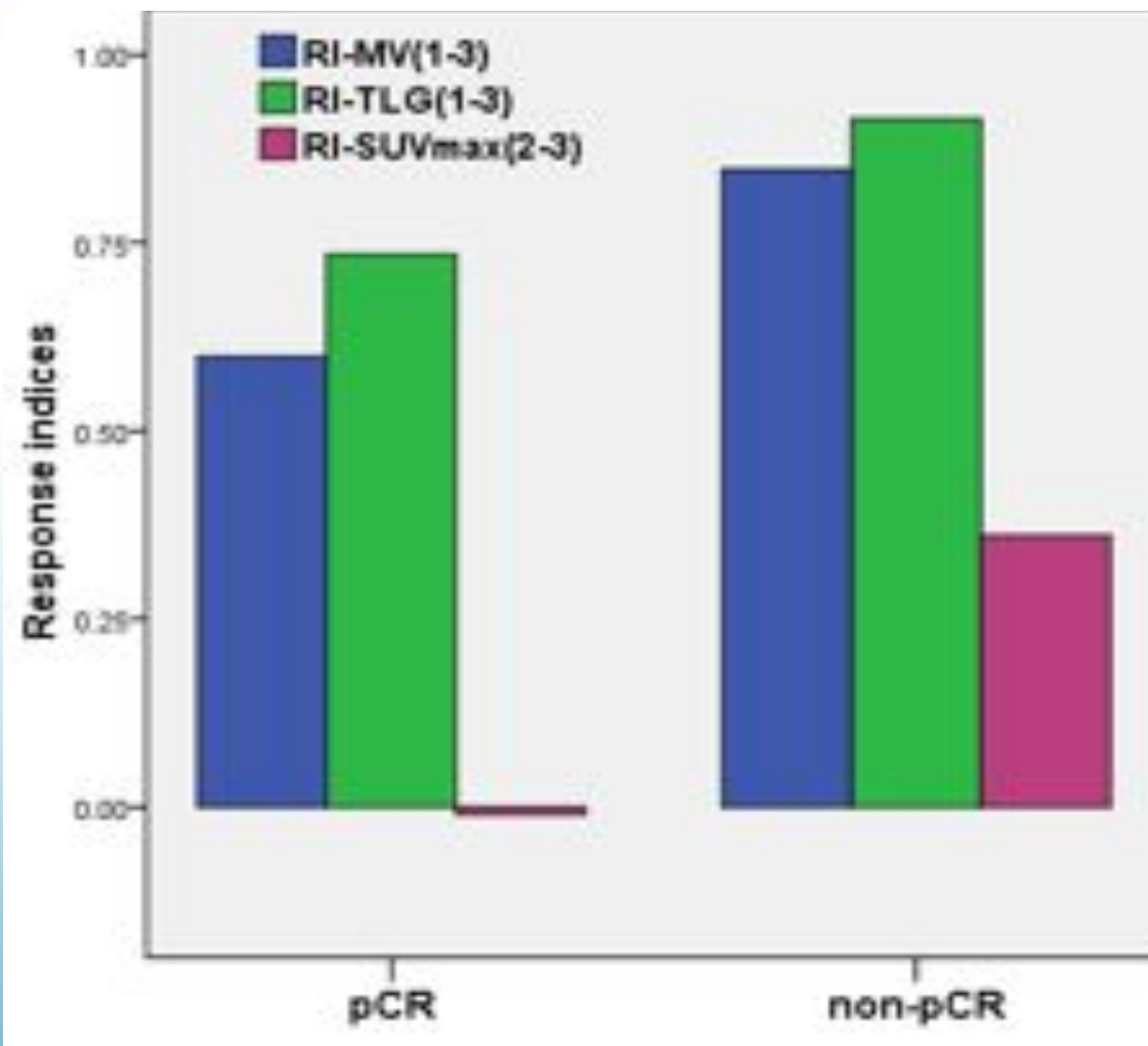


PET/CT1
(before CRT)

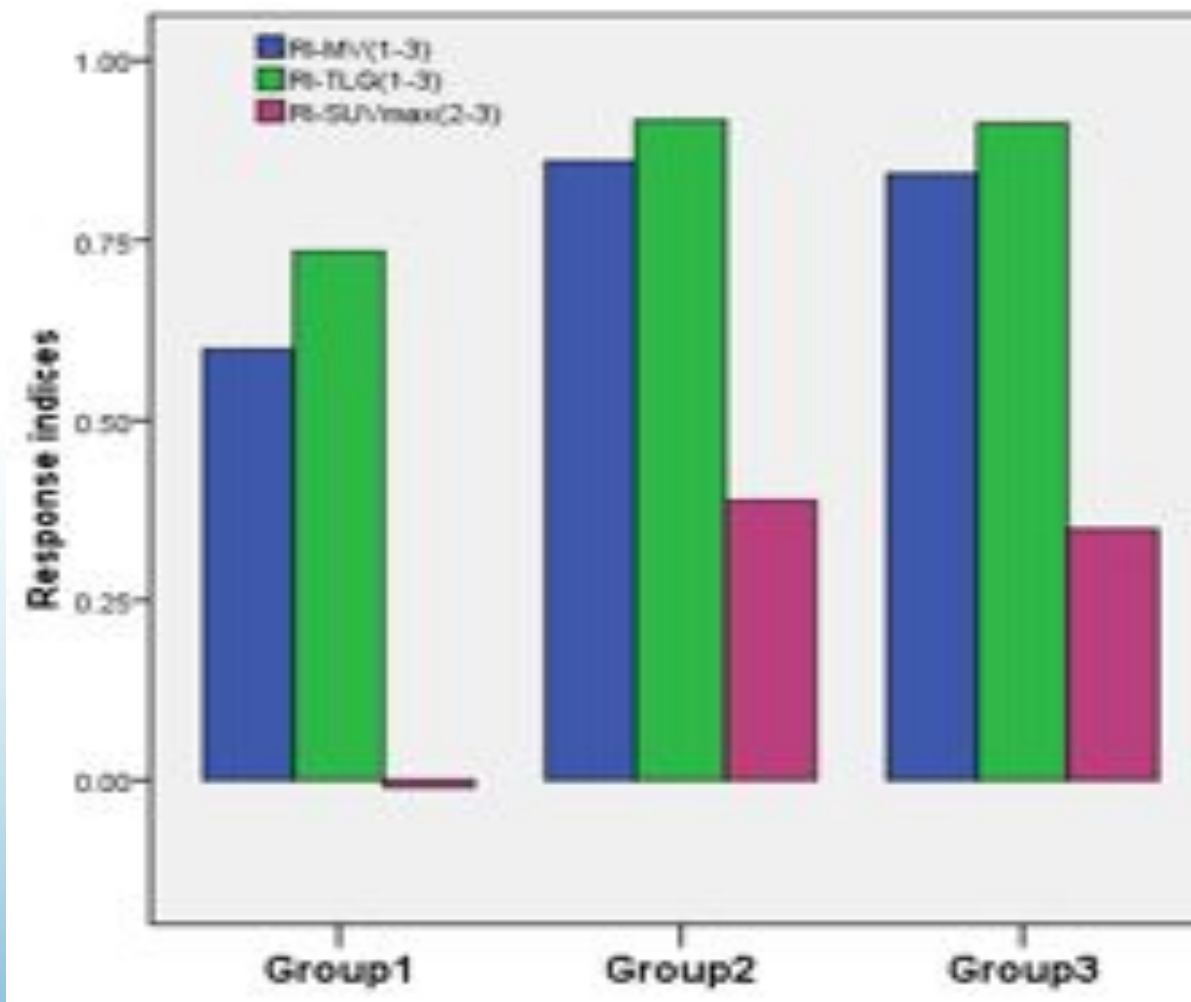
PET/CT2
(after CRT)

PET/CT3
(before surgery)

Metabolic parameters in pCR and non-pCR group



Metabolic parameters in no tumor, rare residual tumor group and others



Group1: no residual tumor cells, pCR; Group2: rare residual tumor cells, TRG 1; Group3: others

OPTIMIZATION

ADJUVANT SETTING – T3N0

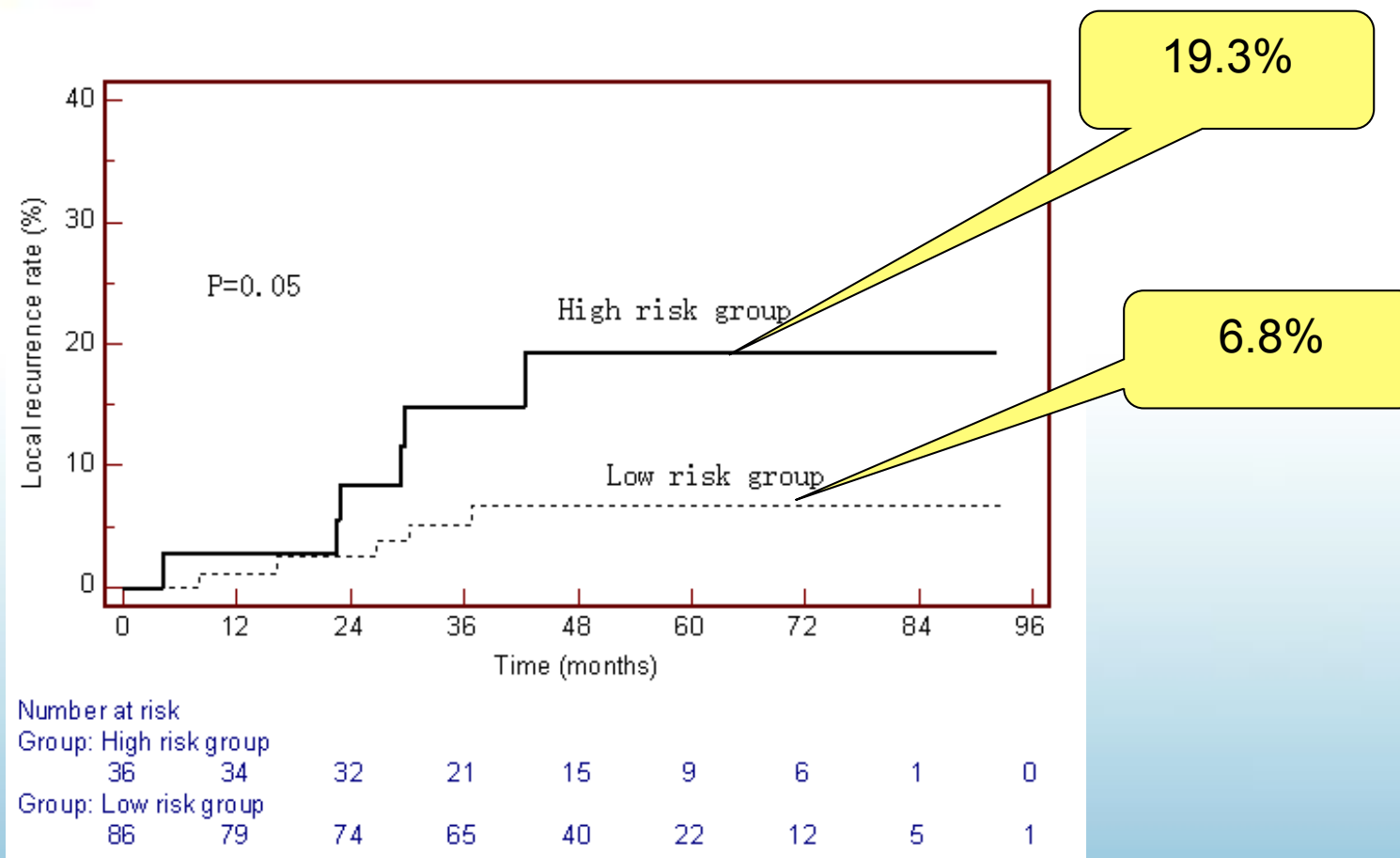
LR: tumor location

Table 3. the values of β and P in Cox multi-variate regression model for local recurrence and disease-free survival.

		β	hazard ratio	P value
Local recurrence	P21 (high:low)	0.591	1.806	0.35
	CD44/v6 (low:high)	0.628	1.874	0.36
	Tumor location (upper:lower)	0.593	1.809	0.33
Disease-free survival	P21 (high:low)	0.925	2.522	0.01
	CD44/v6 (low:high)	0.842	2.321	0.03

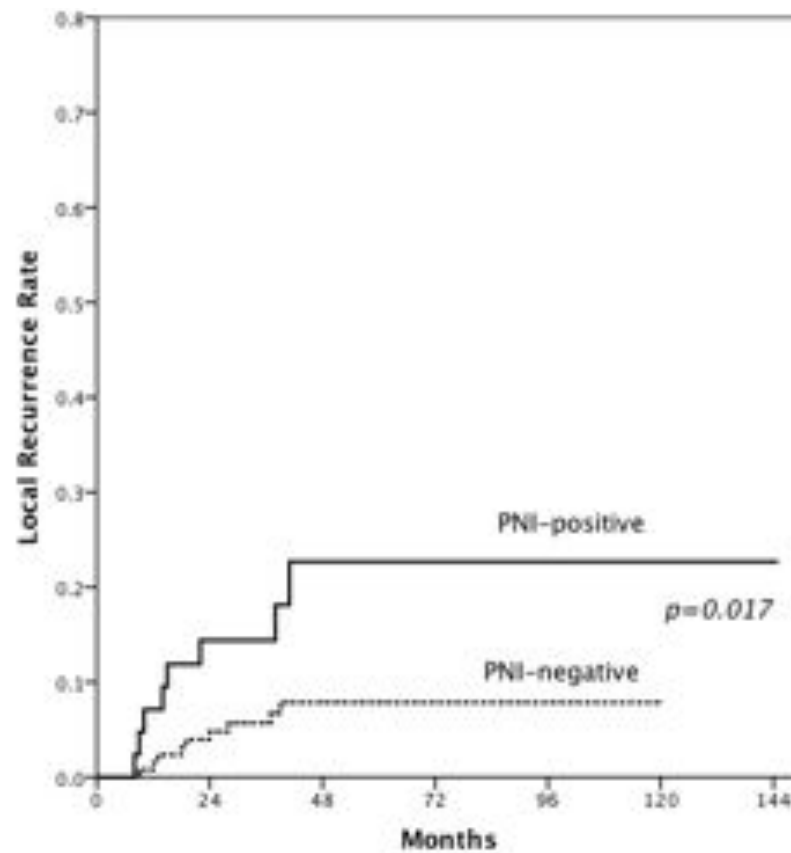
Zhu J, Radiation Oncology 2010, 5:118

Local recurrence



Zhu J, Radiation Oncology 2010, 5:118

PNI



Peng JJ, Cancer 2011

Recurrent and stage IV disease

Recurrent rectal cancer

RT: 45Gy/25Fx, boost 10-16Gy

CPT-11: 50mg/m² qw



Xeloda: 625mg/m²/d bid

Gang C, ASTRO 2012

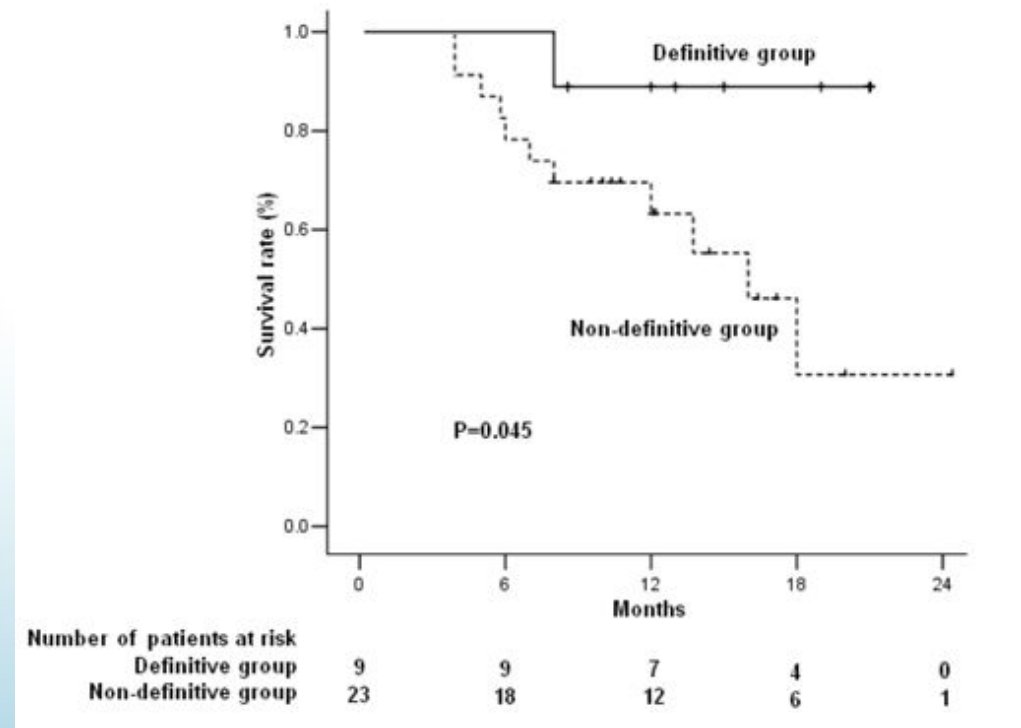
Outcome

- 58 patients
 - pCR 7/11
 - cCR 1
 - PR 19
- G3 toxicity:
 - haemo: 7%
 - diarrhea: 9%
- G4 toxicity:
 - FN:3%

Gang C, ASTRO 2012

Stage IV disease

- Locally advanced disease w synchronous initially unresectable liver metastasis
 - IMRT/concomitant boost 55Gy
 - XELOX 6



Ongoing studies

- Biomarker guided CRT
 - Locally advanced – UTG 1A1 directed
 - Stage IV – CTC based treatment stratification
- Parameters:
 - Clinical
 - Imaging
 - Dosimetric
 - Genotype/biomarkers

Thanks!