

HDR – Results and Future Studies in Monotherapy

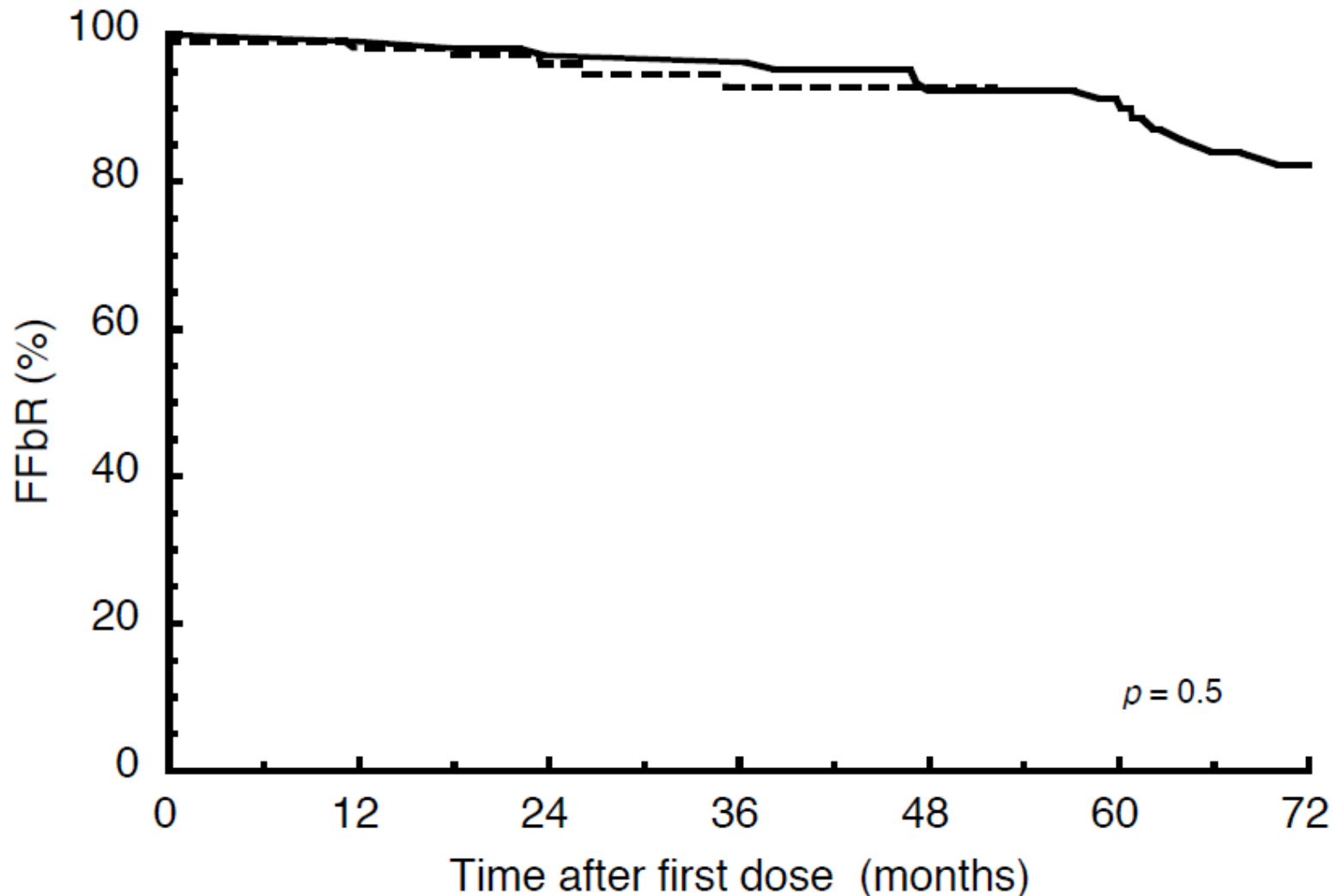
Peter Hoskin

Mount Vernon Cancer Centre

MV HDR monotherapy

31.5Gy/3f and 26Gy/2f:

227 patients; median follow up 47 months

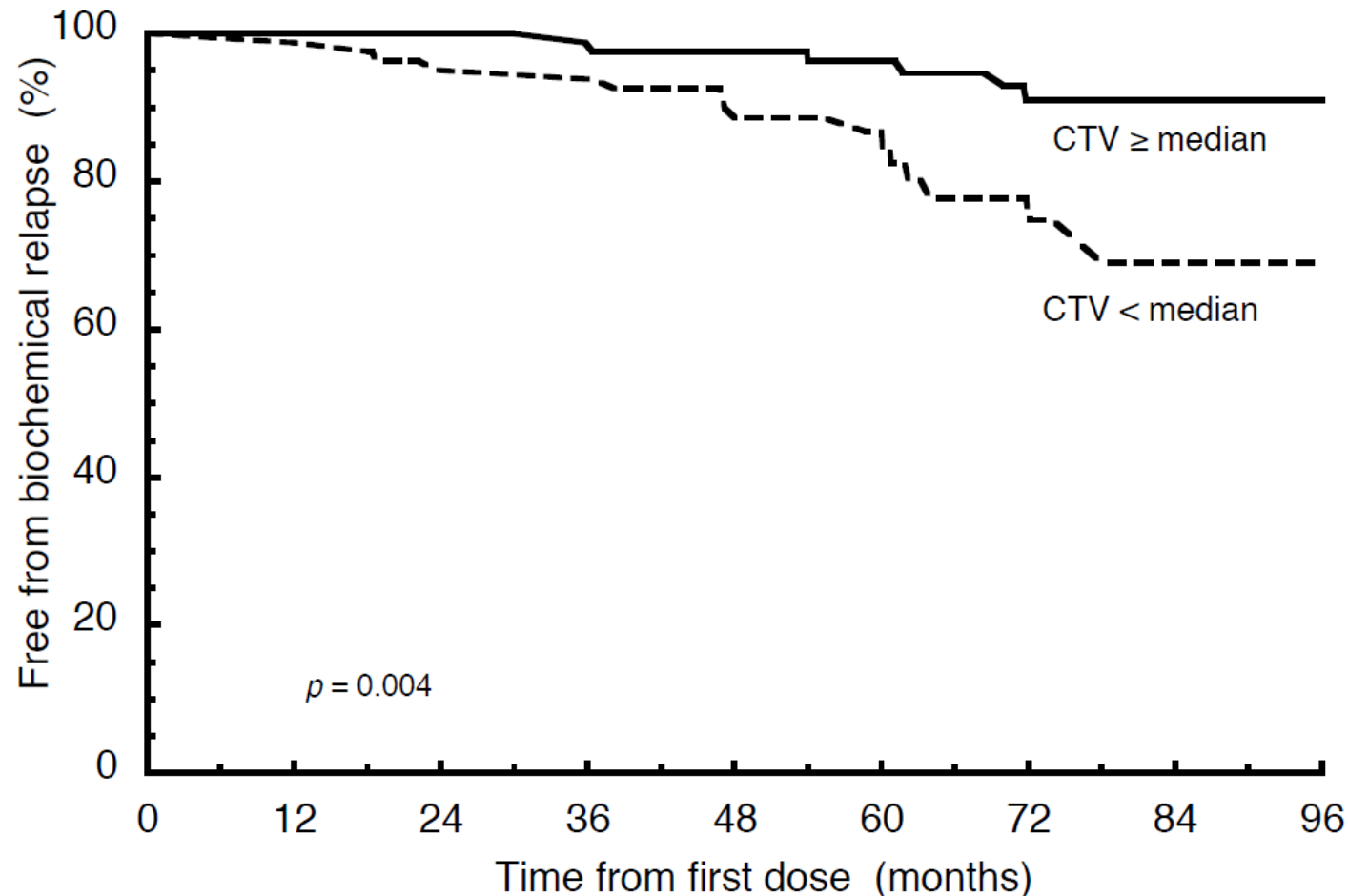


MV HDR monotherapy

34Gy/4f/36Gy/4f/31.5Gy/3f :

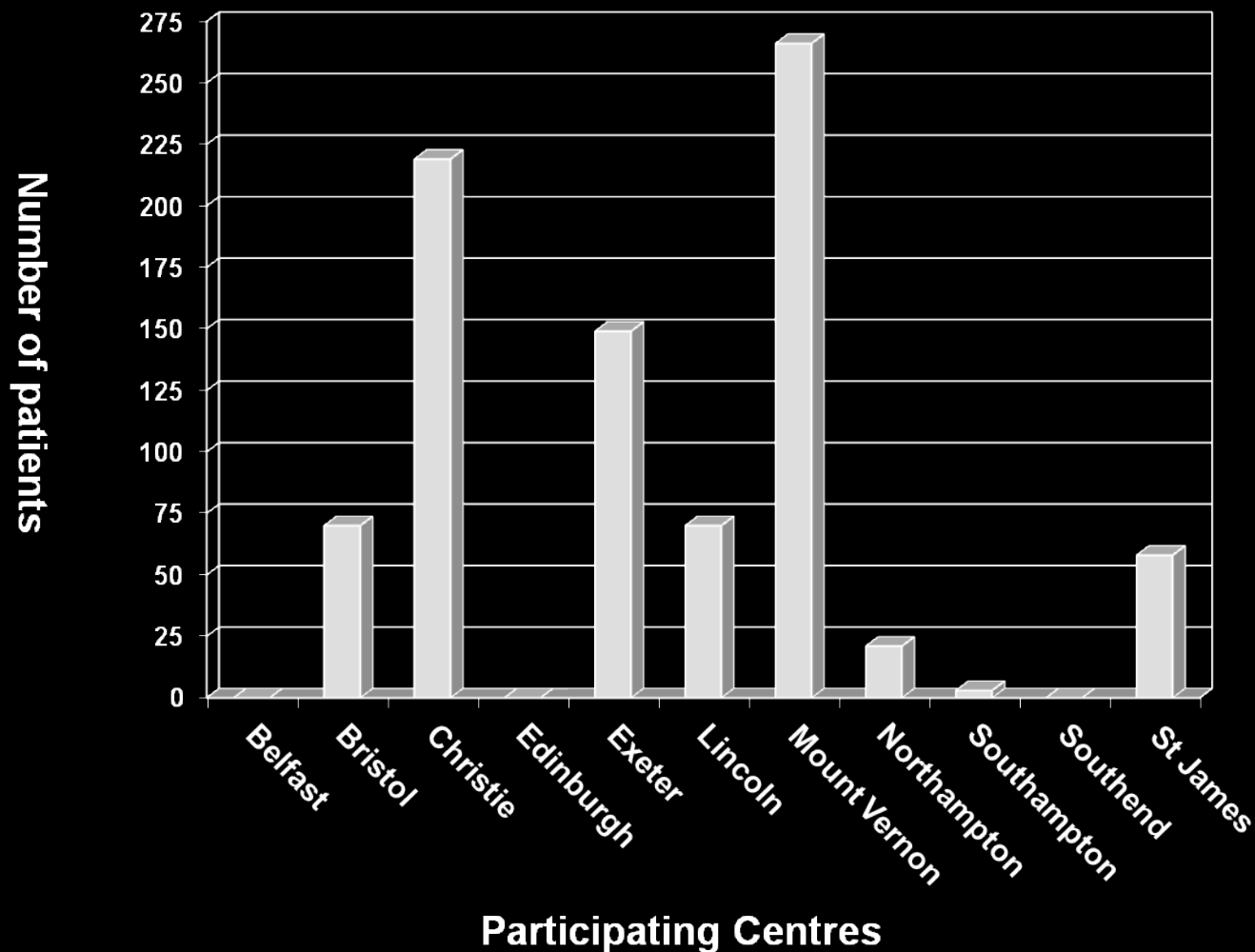
164 patients; median follow up 71months

median CTV 60ml (range 14 - 208)



HDR single dose boost database

Total number = 856



Recruitment by centre

Data received at MVCC 31.05.2013

Centre No:	Centre	No of Pts
001	Belfast	0
002	Bristol	70
003	Christie Hospital	219
004	Edinburgh	0
005	Exeter	149
006	Lincoln	70
007	Mount Vernon	266
008	Northampton	21
009	Southampton	3
010	Southend	0
011	St James Leeds	58
		856

Age Distribution

	<u>Range</u>	<u>Median</u>
• Bristol	52 – 81	68
• Christie	47 – 79	66
• Exeter	55 – 82	73
• Lincoln	51 – 78	67
• Mount Vernon	48 – 81	68
• Northampton	57 – 72	61.5
• Southampton	60 - 68	64
• St James	49 – 77	66

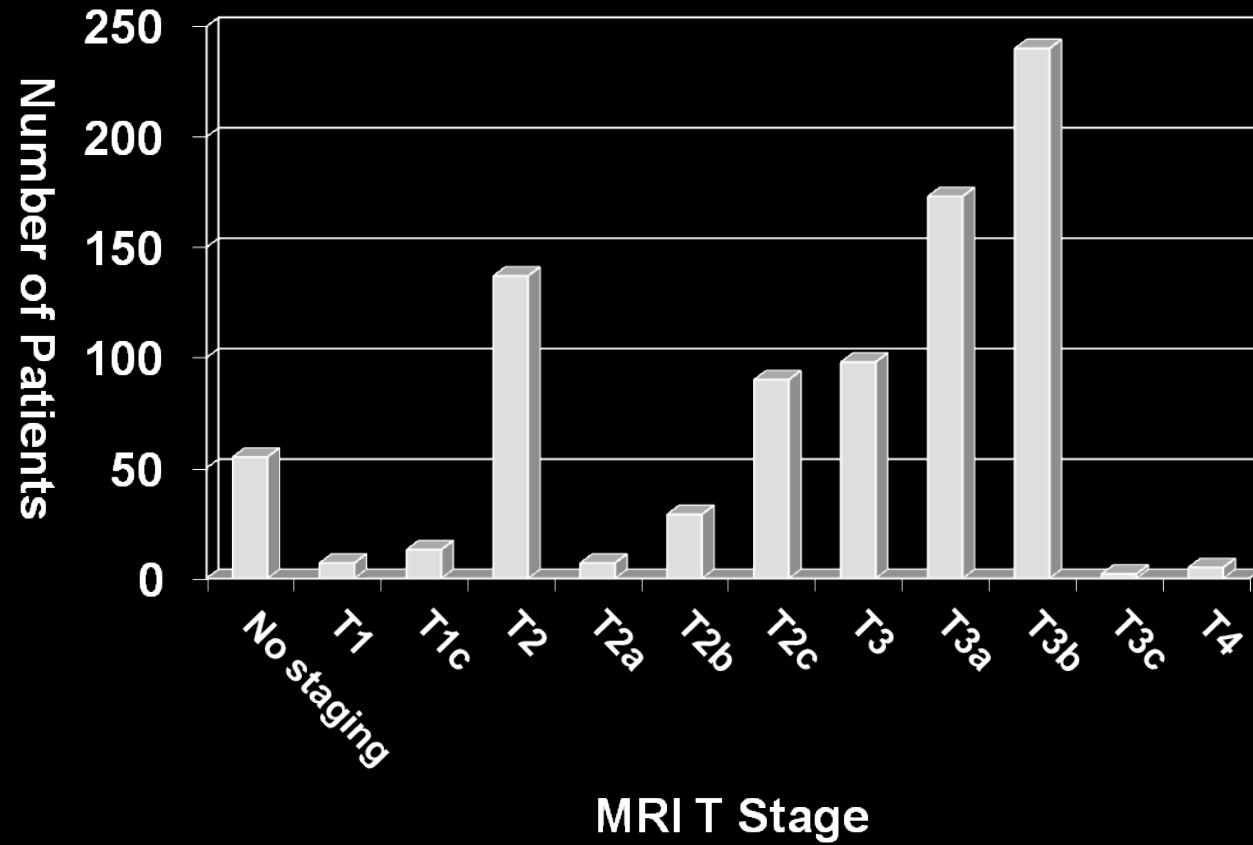
Presenting PSA Distribution

	<u>Range</u>	<u>Median</u>
• Bristol	1.70 – 126.00	23.85
• Christie	3.40 – 103.00	18.00
• Exeter	2.30 – 188.00	20.00
• Lincoln	3.30 – 99.10	13.70
• Mount Vernon	2.90 – 240.20	17.55
• Northampton	5.30 - 16.00	12.05
• Southampton	4.80 – 9.20	7.60
• St James	2.80 – 108.00	10.60

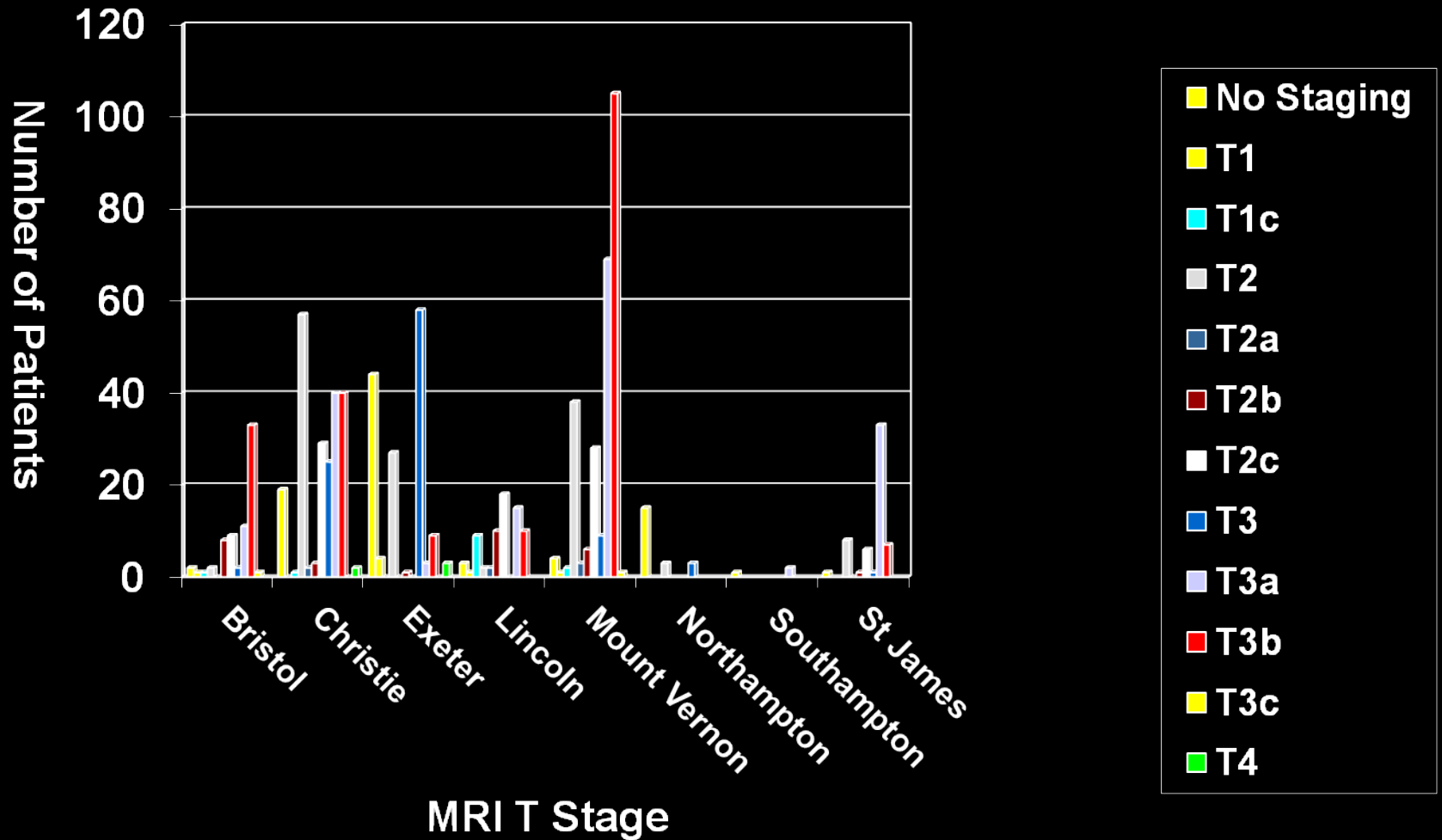
PSA at time of RT

	<u>Range</u>	<u>Median</u>	<u>Data Returns</u>
• Bristol	0.10 - 20.60	0.90	All patients
• Christie	0.10 – 23.20	1.00	171/219
• Exeter	0.10 - 82.00	1.90	50/149
• Lincoln	0.10 - 23.80	0.90	66/70
• Mount Vernon	0.10 – 62.60	0.40	215/266
• Northampton	5.30 - 16.00	12.05	6/21
• Southampton	0.40 – 12.00	0.6	All patients
• St James	0.20 -131.0	6.70	19/58

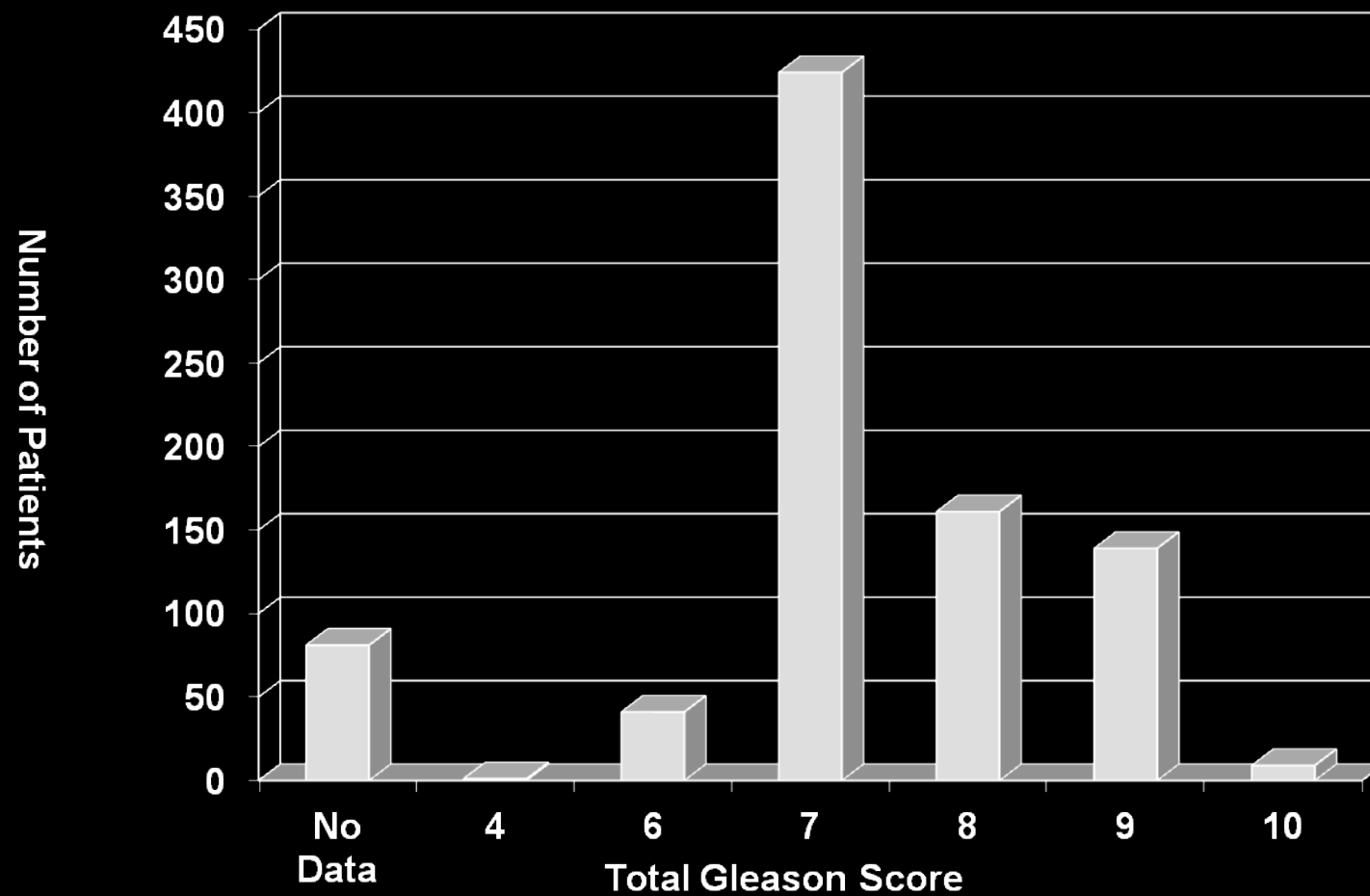
MRI T Stage



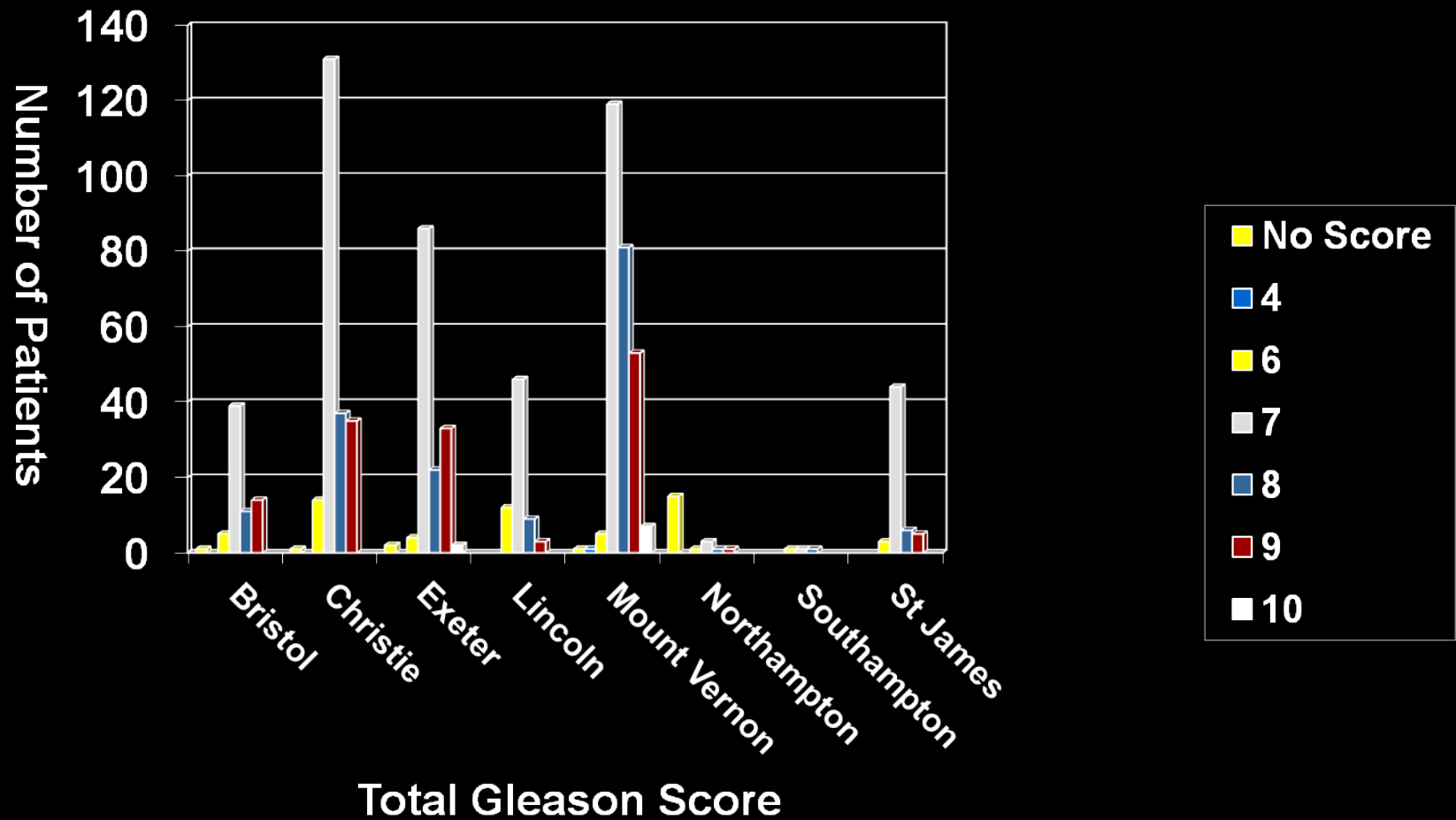
MRI T Stage by Centre



Total Gleason Score



Total Gleason Score by Centre



Dose

Centre	37.5Gy	46Gy	Other	No Data
Bristol		69	1	
Christie	219			
Exeter	88	9	3	49
Lincoln	66	2	1	1
Mount Vernon	2	253	5	6
Northampton	15			6
Southampton	3			
St James	58			
Total	451	333	10	62

PTV Dose

- **D90:** $\geq 15\text{Gy}$ = 646
Treated outside protocol $\leq 15\text{Gy}$ = 36
No Data = 174
- **V100:** $\geq 95\%$ = 463
Treated outside protocol $\leq 95\%$ = 219
No Data = 174

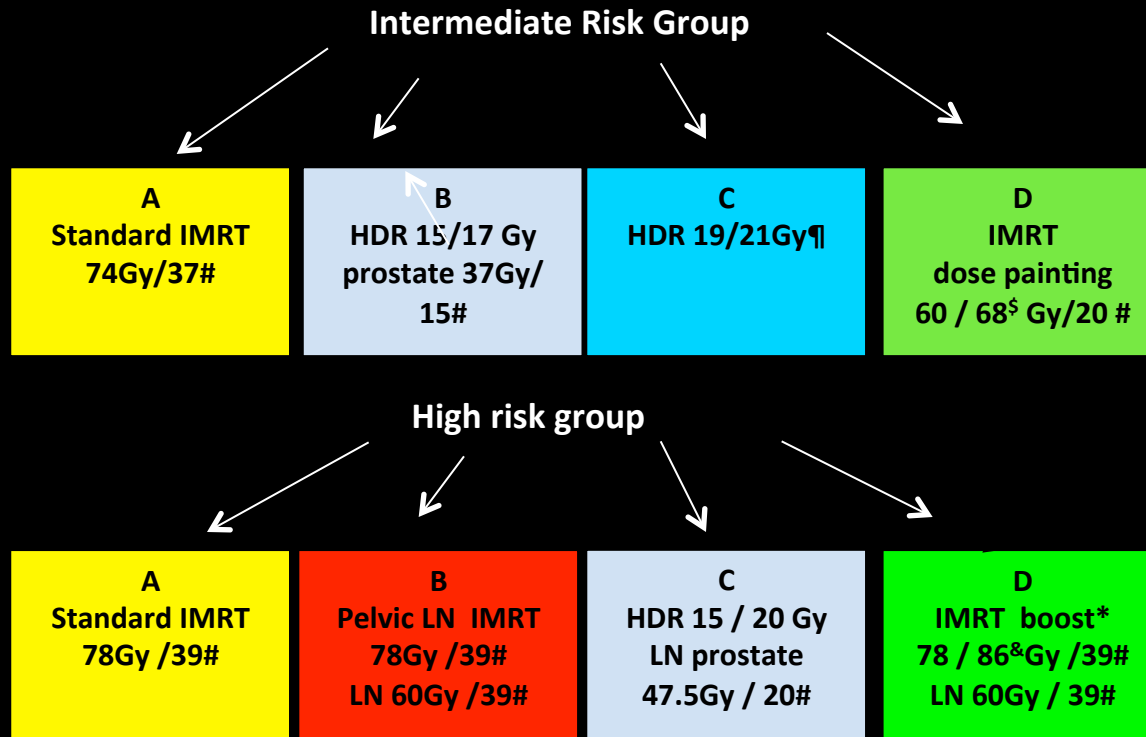
OAR Dose Tolerances

- **Rectum D2cc** $>12\text{Gy}$ = 569
 $\leq 12\text{Gy}$ = 1
 No Data = 356
- **Urethra D10** $<17.5\text{Gy}$ = 675
 Treated outside protocol $>17.5\text{Gy}$ = 7
 No Data = 174
- **Urethra D30** $<16.5\text{Gy}$ = 476
 Treated outside protocol $>16.5\text{Gy}$ = 206
 No Data = 174

Future Studies in HDR prostate brachytherapy:

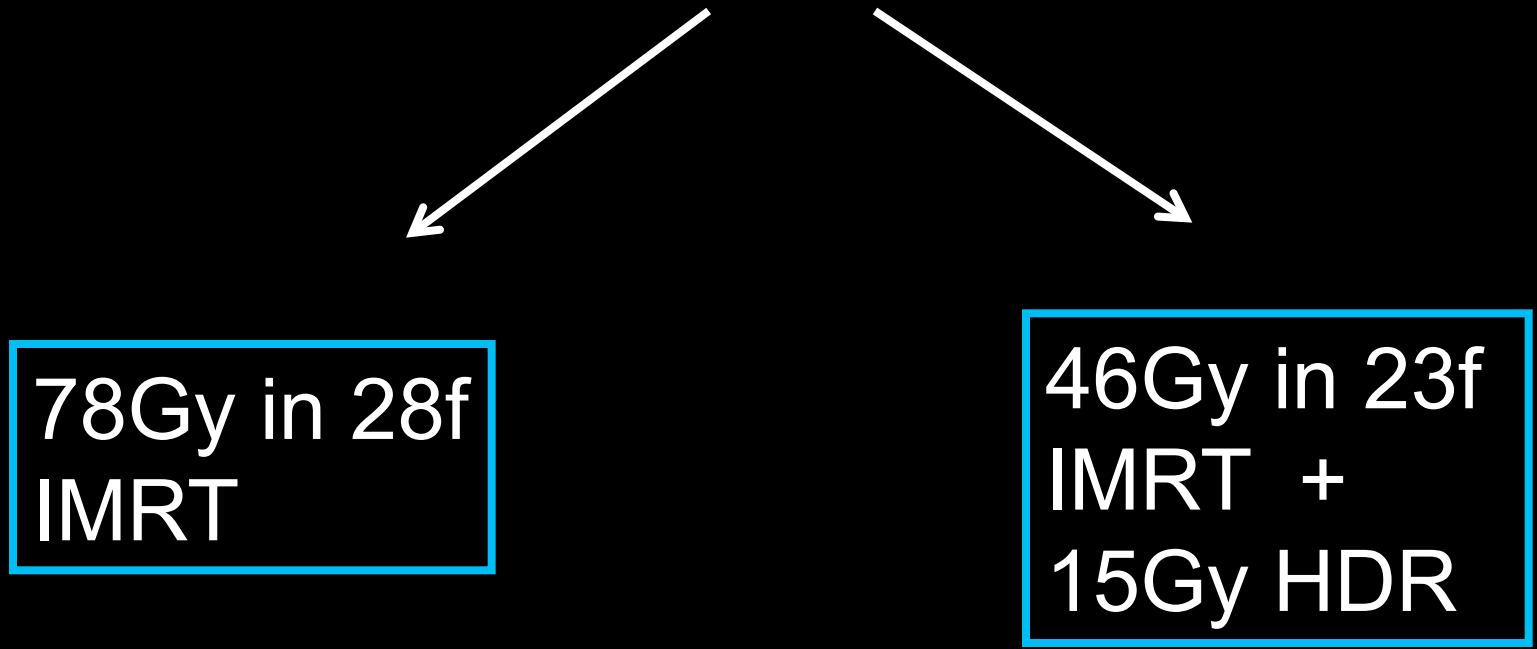
- Single dose boost
- Monotherapy

HEXPROP



.....? role for IMRT vs IMRT+ HDR BT 2 arm study

NCIC proposed study

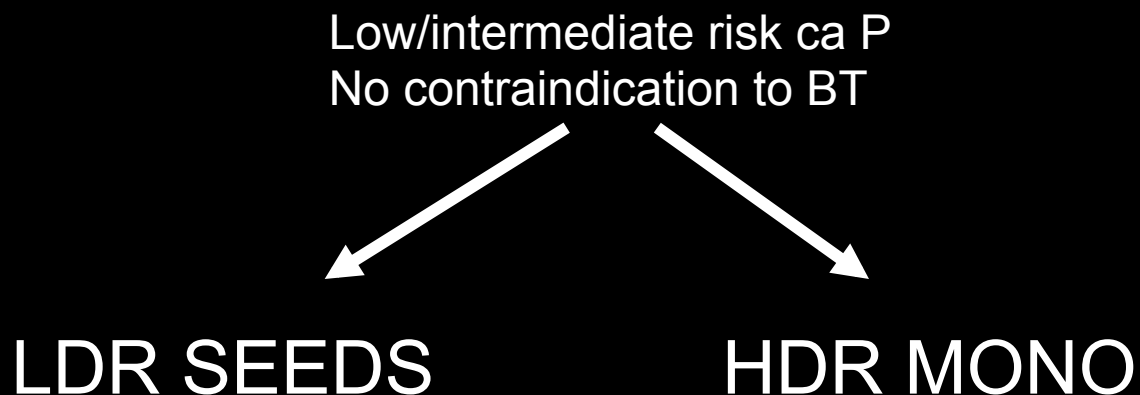


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graph TD; A[NCIC proposed study] --> B[78Gy in 28f IMRT]; A --> C[46Gy in 23f IMRT + 15Gy HDR];
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78Gy in 28f
IMRT

46Gy in 23f
IMRT +
15Gy HDR

.....the future of HDR monotherapy



Primary end point: bRFS

Secondary end points; toxicity: urinary, sexual

N=496 for 80% power and alpha 0.05; 10% difference