



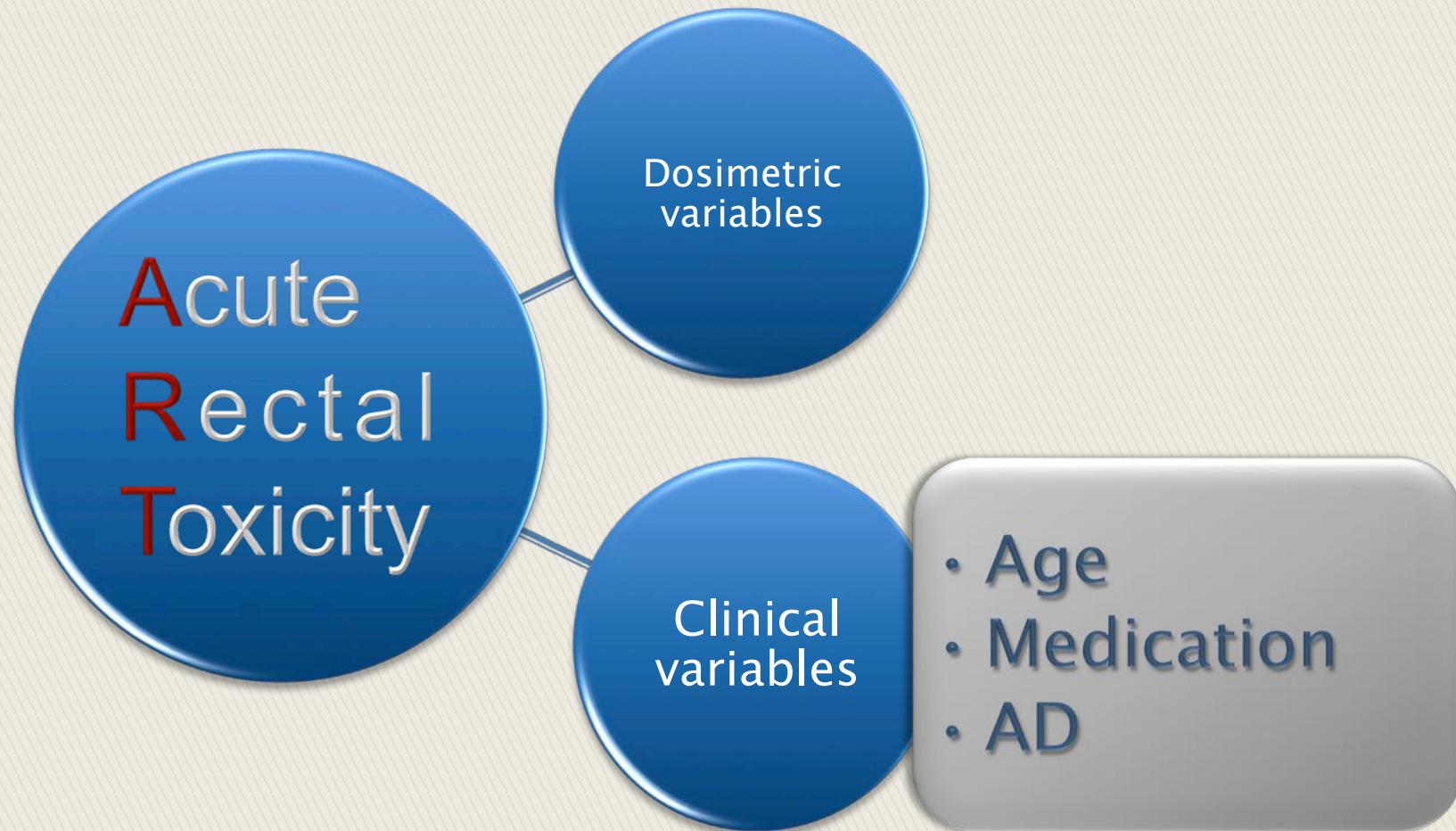
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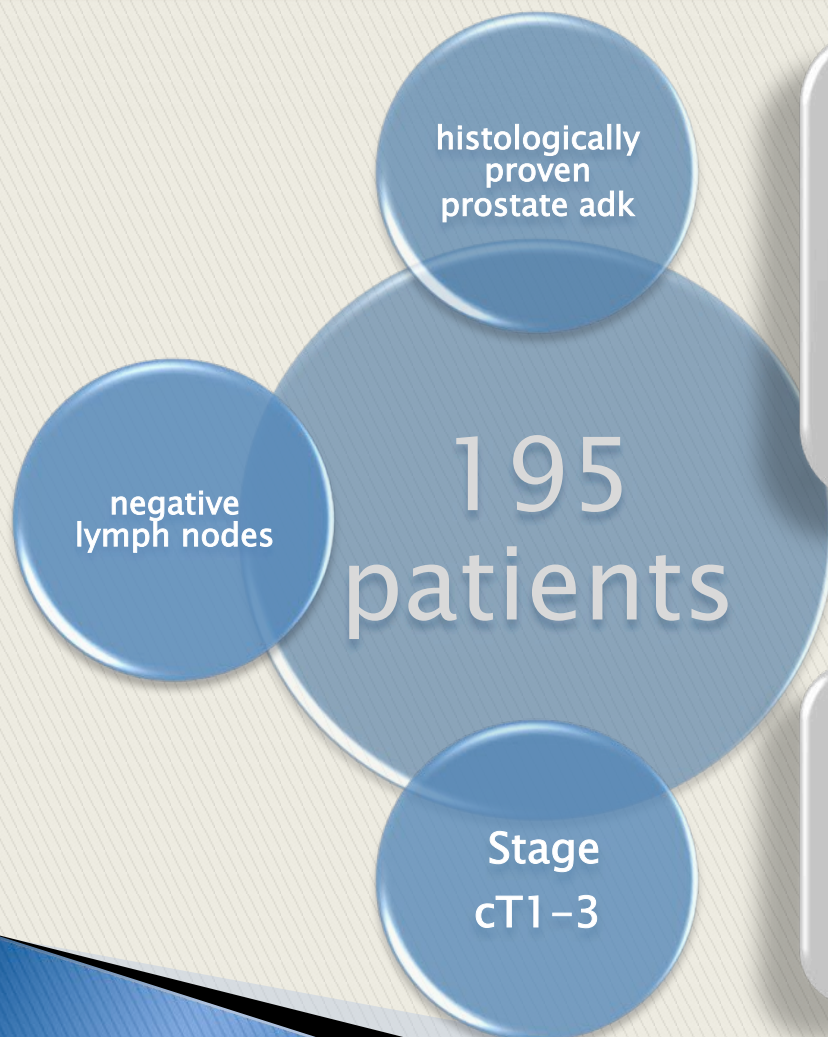
RISK FACTORS FOR ACUTE RECTAL TOXICITY IN PROSTATE CANCER PATIENTS RECEIVING HYPOFRACTIONATED IMRT

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RISK FACTORS FOR ACUTE RECTAL TOXICITY IN PROSTATE CANCER PATIENTS RECEIVING HYPOFRACTIONATED IMRT



- history;
- medications for cardiovascular comorbidities;
- clinical examination;
- PSA;
- TR-US;
- pelvic MRI;
- \pm abdominal TC / bone scintigraphy

On the basis of adverse prognostic factors



Short/long course HT

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CTV1: prostate

sd 2.25 Gy TD 74.25 Gy /33 fr (EQD2: 79.55 Gy for α/β 1.5 Gy)



CTV2: seminal vesicles(SV)

cT3b stage
sd:2.25 Gy TD:74.25 Gy /33 fr
(EQD2: 79.55 Gy for α/β 1.5 Gy)

risk SV involvement >15%
sd:1.88 Gy TD:62 Gy /33 fr
(EQD2: 59.91 Gy for α/β 1.5 Gy)

- Rectum: V38<60%,V57<40%,V66.5<25%;
- Bladder: V62<50%;
- Femoral Heads: V47.5<10%.

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	Median	Range
Age (years)	74	57 – 85
T stage, <i>n</i> (%)		
<i>T1a</i>	3 (1.54)	
<i>T1b</i>	2 (1.03)	
<i>T1c</i>	28 (14.36)	
<i>T2a</i>	21 (10.77)	
<i>T2b</i>	36 (18.46)	
<i>T2c</i>	83 (42.56)	
<i>T3a</i>	9(4.62)	
<i>T3b</i>	13 (6.67)	
Gleason score, <i>n</i> (%)		
2-6	114 (58.47)	
7	55 (28.21)	
8-10	26 (13.34)	
Basal PSA, <i>ng/ml</i>	8.1	1.6 – 42.59
Hormonal therapy, <i>n</i> (%)	107 (54.87)	

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	Median	Range
Irradiation volumes, <i>n</i> (%)		
<i>Prostate</i>	111 (56.9)	
<i>Prostate + SV at risk</i>	71 (36.4)	
<i>Prostate + SV involved</i>	13 (6.7)	
Prostatic volume, <i>cm</i> ³	43.93	16.72 – 161.60
Mean rectal dose, <i>Gy</i>	34.39	10.74 – 48.05
Rectal V25, %	69	25 – 99
Rectal V38, %	42	10 – 65
Rectal V57, %	13	3 – 38
Rectal V66.5, %	3	1 – 10

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	Yes	No
Medication, <i>n</i> (%)		
<i>Anticoagulants drugs</i>	11 (5.65)	184 (94.35)
<i>Angiotensin-converting enzyme inhibitors</i>	73 (37.44)	122 (62.56)
<i>Angiotensin II receptor antagonists</i>	37 (18.98)	158 (81.02)
<i>Beta blockers</i>	35 (17.95)	160 (82.05)
<i>Calcium channel blockers</i>	42 (21.54)	153 (78.46)
<i>Diuretics</i>	54 (27.69)	141 (72.31)
<i>Statins</i>	55 (28.21)	140 (71.79)

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CTCAE 3.0 toxicity grade	Number of patients	% of total
0	116	59.49
1	44	22.56
2	33	16.92
3	2	1.03
4	0	-

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	Acute Rectal <u>Tox</u> :		p
	Yes	No	
Patients, <i>n</i>	79	116	-
Age*, <i>years</i>	74 (57-85)	74 (58-83)	0.094
Prostatic volume*, <i>cm³</i>	43.93 (22.57-146.51)	43.88 (16.72-161.14)	0.965
Mean rectal dose*, <i>Gy</i>	33.52 (11.83- 48.05)	34.77 (10.73- 46.77)	0.523
Rectal V25*, %	67 (25-97)	70 (35-99)	0.433
Rectal V38*, %	42 (10-65)	43 (18-65)	0.536
Rectal V57*, %	14 (4-38)	13 (3-28)	0.400
Rectal V66.5*, %	3 (1-10)	3 (1-10)	0.123
Irradiation volumes, (prostate/ <u>prostate+VS at risk</u> / <u>prostate+VS inv</u>)	50/23/6	61/48/7	0.217
Hormonal therapy, (<i>yes/no</i>)	44/35	63/53	0.964
Anticoagulants (<i>yes/no</i>)	3/76	8/108	0.545
<u>Angiotensin</u> -converting enzyme inhibitors, (<i>yes/no</i>)	26/53	47/69	0.354
<u>Angiotensin</u> II receptor antagonists, (<i>yes/no</i>)	19/60	18/98	0.192
Beta blockers, (<i>yes/no</i>)	13/66	22/94	0.796
Calcium channel blockers, (<i>yes/no</i>)	11/68	31/85	0.050
Diuretics, (<i>yes/no</i>)	20/59	34/82	0.654
<u>Statins</u> , (<i>yes/no</i>)	15/64	40/76	0.028

*Data are reported as median and min/max

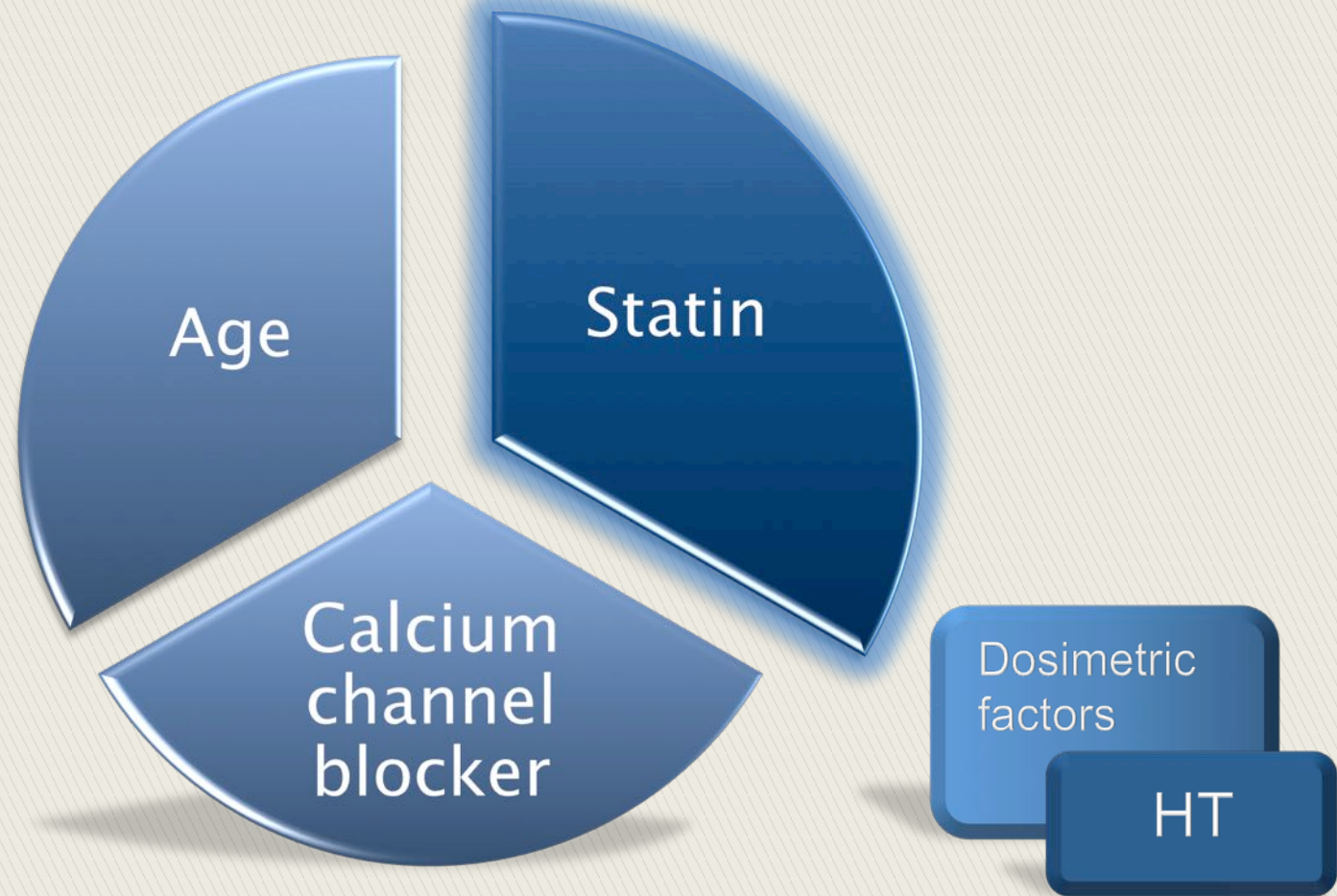
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Variables for GI toxicity	Odds ratio	95% CI	p value
Age	1.075	1.000– 1.155	0.049
Rectal V66.5	1.109	0.972– 1.266	0.123
Irradiation volumes	0.989	0.581– 1.680	0.967
Calcium channel blockers	0.430	0.178– 1.035	0.060
Statins	0.456	0.211–0.982	0.045
Angiotensin II receptor antagonists	1.489	0.627– 3.532	0.367

Statin administration significantly ($p=0.029$) reduced the acute rectal toxicity grade:

- G0: 40/116 (34.48%);
- G1: 12/44 (27.27%);
- G2: 3/33 (9.09%);
- G3: 0/2.

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- A moderate hypofr IMRT +
 - Close adherence to dose constraints +
 - Statin =
-

Low incidence of acute rectal toxicity.

Less acute toxicity is closely linked to less late toxicity

Future prospective studies on a larger cohort of patients

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GRAZIE DELL'ATTENZIONE