Associazione Italiana Radioterapia e Oncologia clinica

Società Italiana di Radiobiologia

Preliminary results of PRO-EPI: PROspective multicenter observational study on Elective Pelvic nodal Irradiation for non-metastatic prostate cancer submitted to radical, adjuvant or salvage radiotherapy with or without androgen deprivation therapy.

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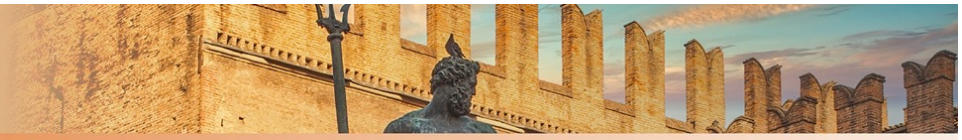


DICHIARAZIONE

Relatore: ANDREA GUERINI

Come da nuova regolamentazione della Commissione Nazionale per la Formazione Continua del Ministero della Salute, è richiesta la trasparenza delle fonti di finanziamento e dei rapporti con soggetti portatori di interessi commerciali in campo sanitario.

- Posizione di dipendente in aziende con interessi commerciali in campo sanitario (NIENTE DA DICHIARARE)
- Consulenza ad aziende con interessi commerciali in campo sanitario (NIENTE DA DICHIARARE)
- Fondi per la ricerca da aziende con interessi commerciali in campo sanitario (NIENTE DA DICHIARARE)
- Partecipazione ad Advisory Board (NIENTE DA DICHIARARE)
- Titolarità di brevetti in compartecipazione ad aziende con interessi commerciali in campo sanitario (NIENTE DA DICHIARARE)
- Partecipazioni azionarie in aziende con interessi commerciali in campo sanitario (NIENTE DA DICHIARARE)

Intermediate/high/very high-risk non-metastatic PCa (IHR-nmPca)

Most frequently diagnosed cancer in Italy 18.5% new cancer cases in Italian male population

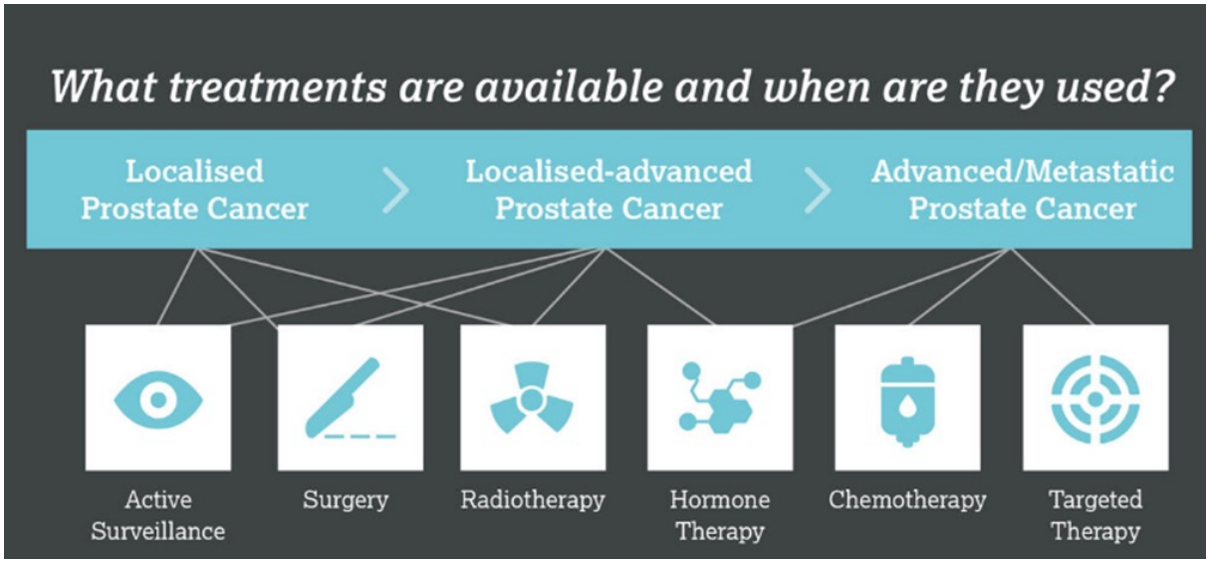
optimal treatment for IHR-nmPca?

trade-off between disease control and toxicity

ADT vs no ADT?

Elective nodal irradiation?

ENI for N0 and/or adjuvant RT?

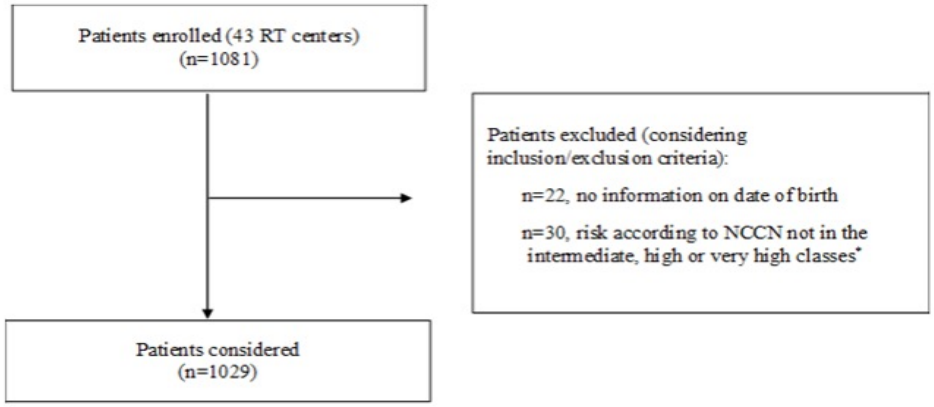


PRO-EPI is a PROspective multicenter observational study on Elective Pelvic nodes Irradiation in patients with IHR-nmPca submitted to radical, adjuvant, or salvage radiotherapy (RT) with or without concomitant ADT.

March 2017 - March 2020

43 radiation oncology centers located in Italy

1,081 consecutive patients



	Patients with available data	Patients deceased at each timepoint	Patients lost to follow-up at each timepoint
Baseline	1029	--	--
1-month	991	0	38
3-month	946	4	41
6-month	913	1	32
12-month	762	4	147

Patients' characteristics

Mean age at diagnosis was 70.4 ± 7.1 years

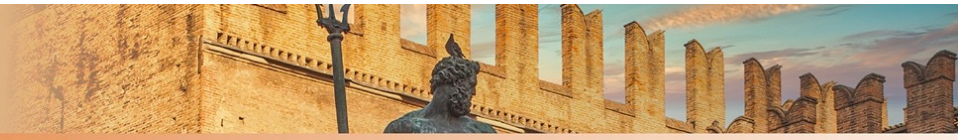
65.3 high or very high NCCN risk disease

34.7% intermediate risk disease

> 70% of patients cT2 or cT3, 10.9% cN+

ISUP grade, *n* (%)	
1	97 (9.5)
2	235 (22.8)
3	246 (23.9)
4	280 (27.2)
5	171 (16.6)
Risk class, *n* (%)	
Intermediate	357 (34.7)
High	524 (50.9)
Very high	148 (14.4)
cT staging at diagnosis, *n* (%)	
T1	277 (26.9)
T2	414 (40.2)
T3	325 (31.6)
T4	9 (0.9)
Missing values	4 (0.4)
cN staging at diagnosis, *n* (%)	
N0	720 (70.0)
N1	112 (10.9)
NX	197 (19.1)

Intermediate-favorable	Any of the following: • T2b-T2c • Gleason score 3+4=7/grade group 2 • PSA 10-20 ng/mL PLUS percentage of positive biopsy cores <50%
Intermediate-unfavorable	Any of the following: • T2b-T2c • Gleason score 3+4=7/grade group 2 or Gleason score 4+3=7/grade group 3 • PSA 10-20 ng/mL
High	Any of the following: • T3a • Gleason score 8/grade group 4 or Gleason score 4+5=9/grade group 5 • PSA >20 ng/mL
Very high	Any of the following: • T3b-T4 • Primary Gleason pattern 5 • >4 cores with Gleason core 8-10/grade group 4 or 5



Treatment characteristics

Elective nodal irradiation (ENI)
503 patients (48.9%)

> 75% (n = 382) PTV included common iliac nodes.

Median duration of ADT 15 mo

RT-ADT association significantly more frequent in ENI group (81.1% vs. 56.1%, p < 0.0001)

AIM

Aim of RT, *n* (%)	
Exclusive RT	664 (64.6)
Adjuvant RT (performed within 6 months from surgery)	309 (30.0)
Salvage RT (after surgery)	56 (5.4)

Techniques

RT method, *n* (%)	
IGRT	868 (84.4)
No IGRT	121 (11.7)
Missing values	40 (3.9)
RT technique, n (%)	
IMRT (step and shoot) or 3D-CRT	181 (17.5)
IMRT (volumetric)	800 (77.8)
SBRT	8 (0.8)
Not specified	40 (3.9)

ENI

Elective Nodal Irradiation, *n* (%)	
ENI	503 (48.9)
ENI including common iliac nodes	382 (75.9)
ENI not including common iliac nodes	121 (24.1)
NO ENI	526 (51.1)

ADT

ADT, *n* (%)	703 (68.3)
Type of ADT, *n* (%)	69 (9.8)
Total androgenic blockade	55 (7.8)
Androgen receptor antagonists	494 (70.4)
Luteinizing hormone-releasing hormone (LH-RH) agonists	77 (11.0)
LH-RH antagonists	1 (0.1)
Other	7 (0.9)

Treatment characteristics

EQD2 to prostate exclusive RT 92.3% ≥ 75 Gy, surgical bed 31.4% in adjuvant RT group, 33.9% salvage RT

Most treatments hypofractionated (n = 680, 66.0%)

Median prescribed dose for ENI was 50.4 Gy, median 28 fr

Heterogeneous prescription for ENI: 50.4 Gy (n = 155; 30.8%), 50 Gy (n = 91; 18, 1%), 45 Gy (n = 79; 15.7%), 54 Gy (n = 49; 9.7%) and 56 Gy (n = 32; 6.4%), 19.3% different.

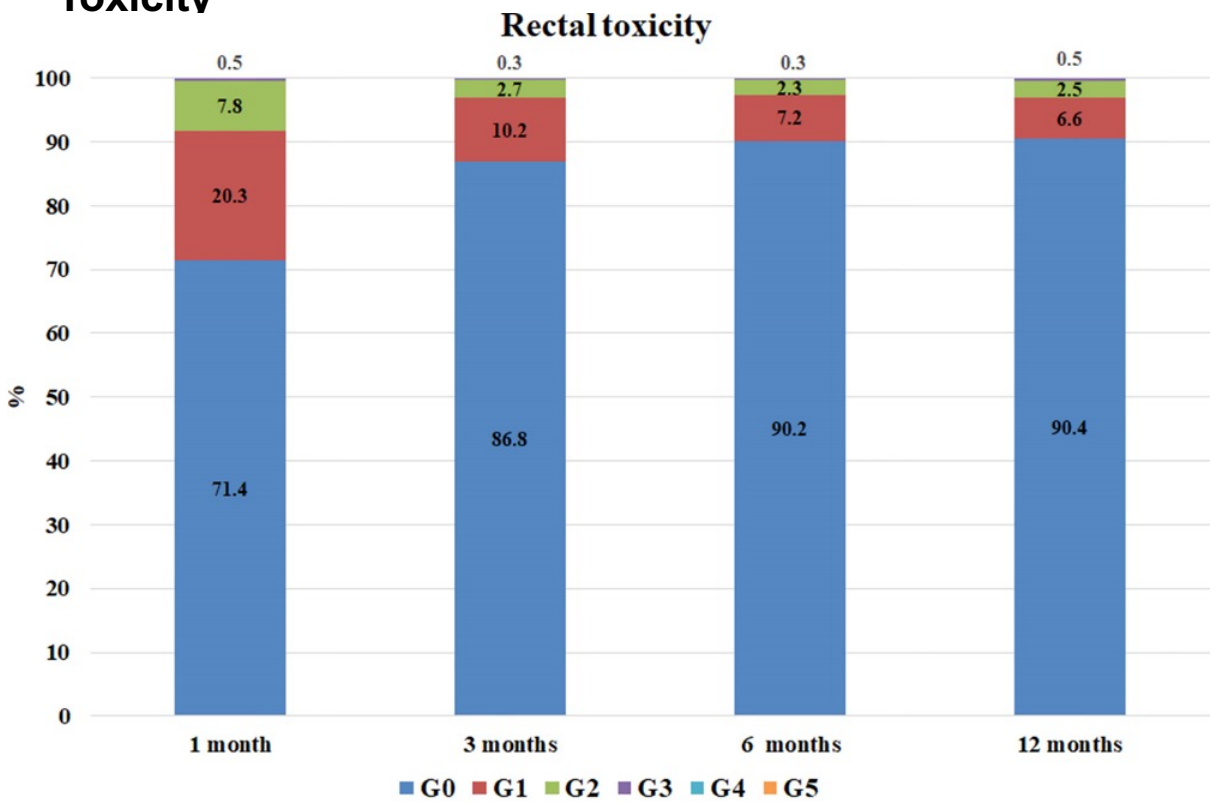
Dose/fr variable: 1.8 Gy (n = 289; 57.5%), 2 Gy (n = 75, 14.9%), 1.7 Gy (n=43, 8.5%), remaining 19.1% different

Toxicity

At 12 months, 73 cases rectal toxicities; CTCAE G1 (n = 50, 68.5%), G2 (n = 19, 26.0%) and G3 (n = 4, 5.5%)

significantly more frequent in patients treated without IGRT (14.4% vs. 8.9%, p = 0.0377)

neither the aim of RT nor the technique nor ENI were associated with rectal toxicity



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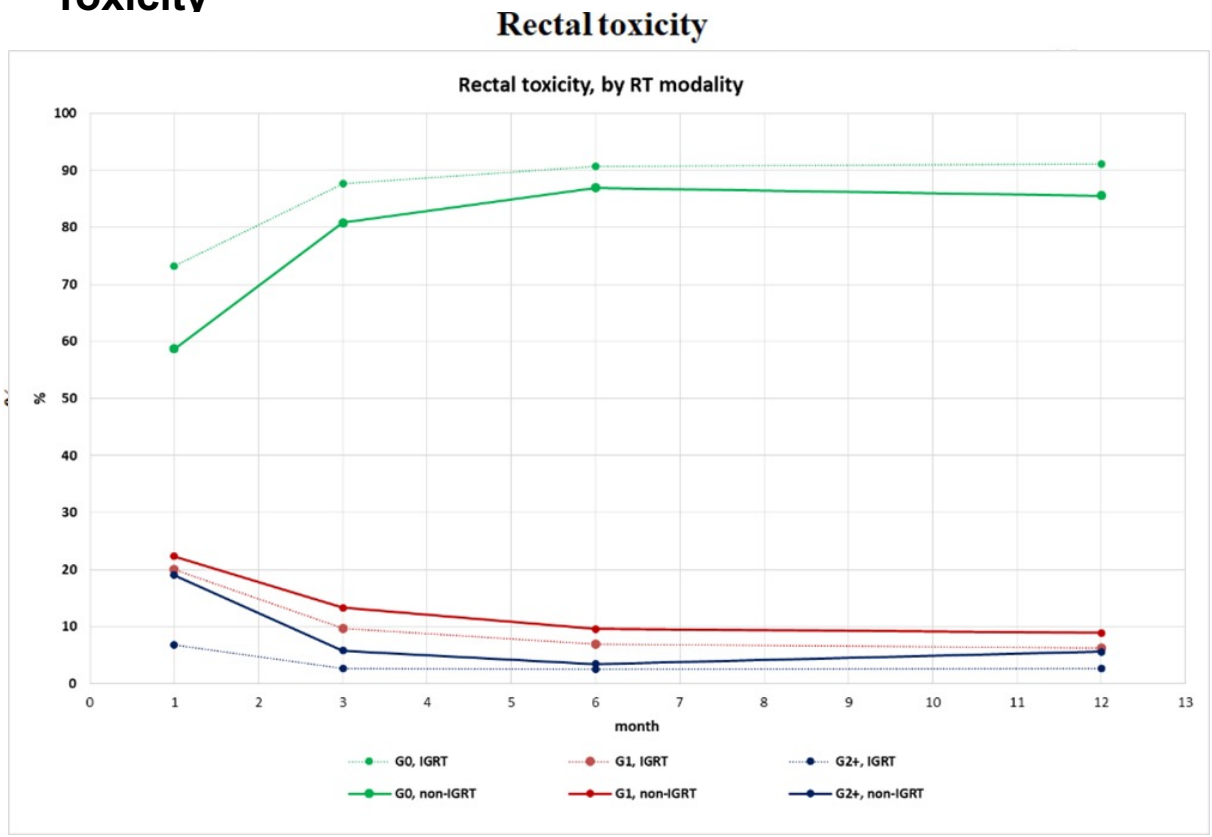
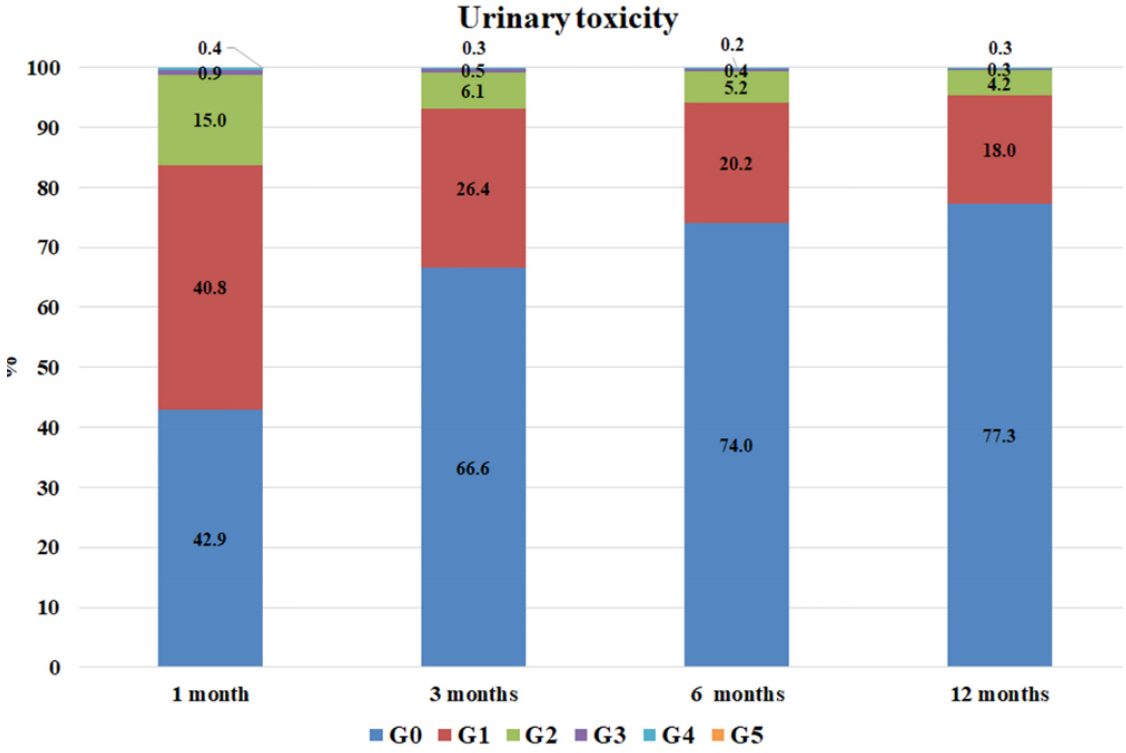


Toxicity

At 12 mo 173 cases of urinary toxicity classified as G1 (n = 137, 79.1%), G2 (n = 32, 18.5%), G3 (n = 2, 1.2%) and G4 (n = 2, 1.2%).

Urinary toxicity 11.1% no IGRT vs 24.3% IGRT group (p = 0.0270).

no statistically significant associations with ENI or RT technique, previous prostatectomy OR 1.31 (p = 0.0435)



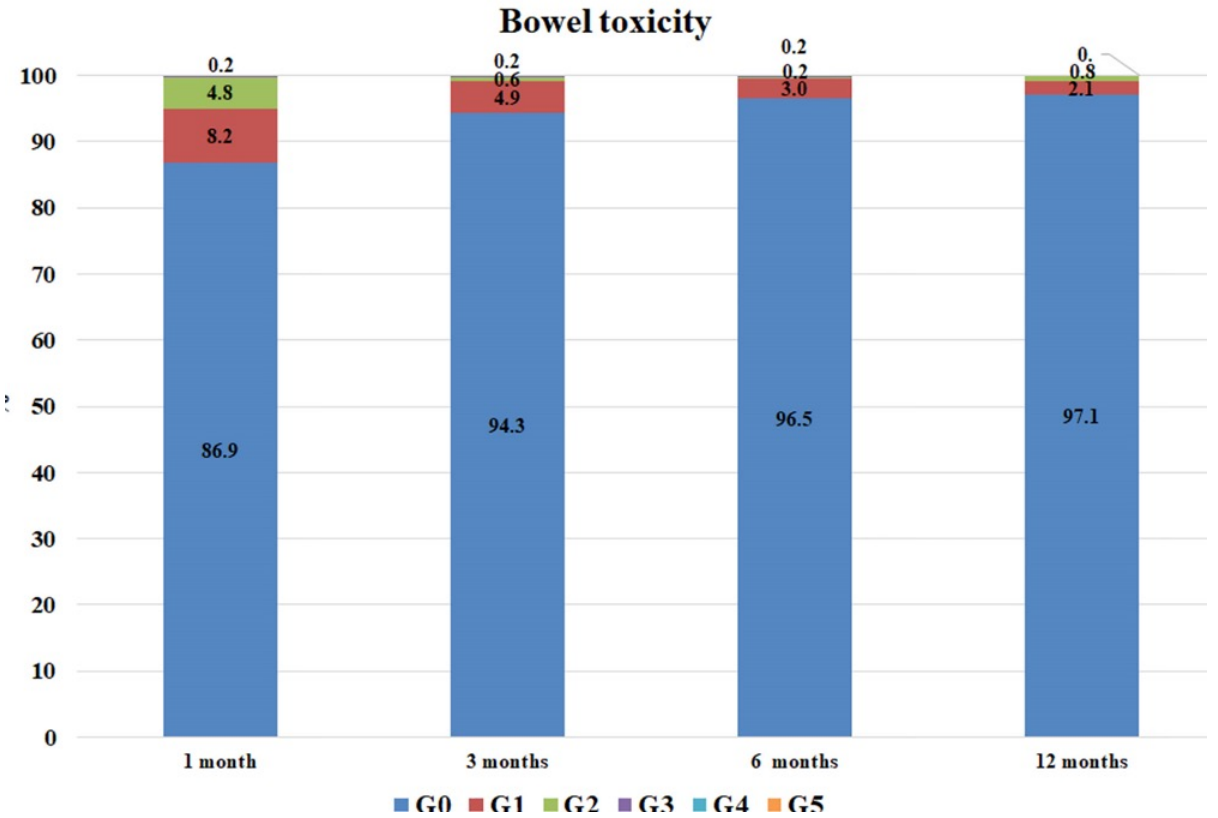
Toxicity

At At 12 mo 22 cases of bowel toxicity G1 (n = 16, 72.7%) and G2 (n = 6, 27.3%).

No IGRT 8.8% vs 2.1% in the IGRT group (p =< 0.0001)

RT after surgery (4.8% adjuvant RT, 4.2% salvage RT) vs exclusive RT (1.8%, p = 0.0310)

No associations with aim of RT or technique. No statistically significant association between ENI and intestinal toxicity (OR 1.20, 95% CI [0.73–1.97], p = 0.4767).



Conclusions

Insight into treatment endorsed by 43 Italian Centers

↑ use of IGRT and volumetric IMRT (85 and 75% of the cases) vs POP III study (2004–2011), IGRT 13%

ENI 49% vs POP III 4% → still no consensus regarding ENI for IHR-nmPca

ENI more often to pts with negative prognostic factors (ISUP score, TNM, PSAi) is in line with recommendations from POP-RT study

Heterogeneous dose and volumes

Conclusions

QoL

UCLA-PCI and SF-12 at 1, 3, 6, and 12 months

no statistically significant ENI vs no ENI (also taking into account surgery vs no surgery)

Toxicity

Toxicity profile overall fair, rates of G3–G4 adverse events were extremely low.

No ↑ in rectal, urinary, and bowel toxicity ENI vs no ENI

IGRT significant ↓ rectal and intestinal toxicity
↑ urinary toxicity greater use of hypofr RT in IGRT group

Conclusions

Limits

preliminary analysis, long-term data are awaited

(late tox, metabolic ADT effect, disease control)

Modern imaging and radiotherapy techniques

whole-body diffusion-weighted MRI, PSMA-PET-CT,

MRI-Linac


Thank you for the attention
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