Hypofractionated Intensity-Modulated Radiotherapy as a boost in patients with locally advanced cervical cancer treated with definitive chemoradiotherapy and unsuitable for brachytherapy: The experience of the European Institute of Oncology

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Brachytherapy as a boost
the gold standard for cervical cancer patients treated
With definitive radiochemotherapy

- About 20% of cervical cancer patients are not good candidates for brachytherapy

AIMS

To evaluate:
- toxicity profile
- efficacy

Hypofractionated IMRT boost
after external beam radiation therapy (EBRT)
in patients with cervical cancer judged unsuitable for brachytherapy boost (BRT).

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Is there a role for an external beam boost in cervical cancer radiotherapy?†

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2013

A dose planning study on applicator guided stereotactic IMRT boost in combination with 3D MRI based brachytherapy in locally advanced cervical cancer

EXTERNAL BEAM BOOST FOR CANCER OF THE CERVIX UTERI WHEN INTRACAVITARY THERAPY CANNOT BE PERFORMED

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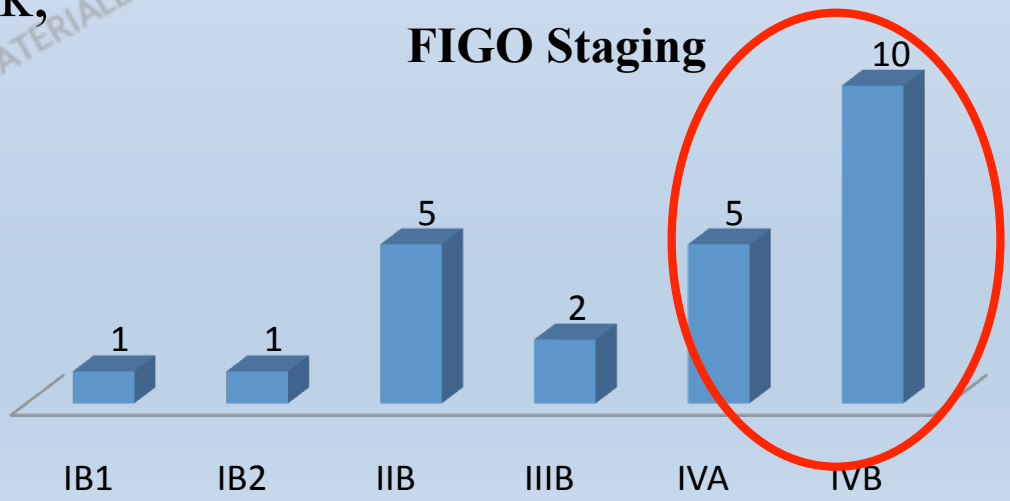
Patients' and tumors' characteristics

- 24 pts with cervical cancer treated between June 2012 and April 2016 at EIO

- Median age: 56 years

- Hystology: 22 SCC, 1 adk,
  1 not available



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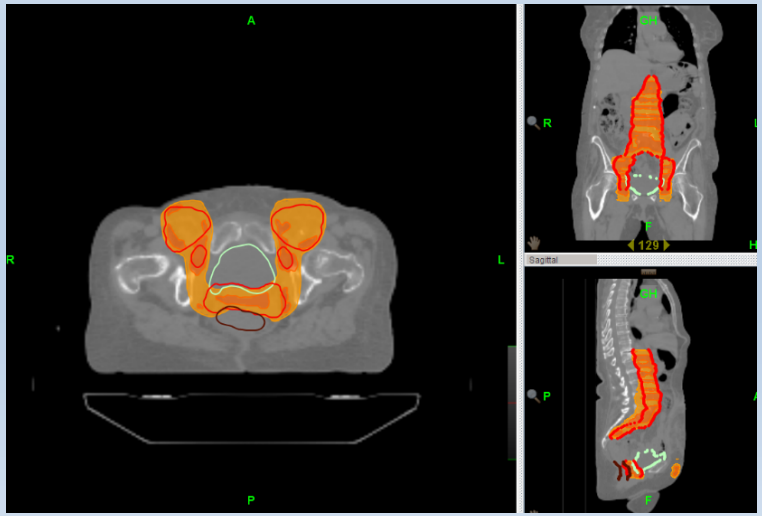
Treatment characteristics

All pts received IMRT-EBRT → ***IGRT***

- primary tumor
- regional nodes
- paraaortic nodes if indicated (12 pts)

Total dose of 43.2-50,4 Gy
(1.8 Gy/fr in all cases)

- Concomitant chemotherapy was performed in 21 pts
- 2 pts received neoadjuvant chemotherapy



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Brachitherapy excluded for:

- Bladder/rectal/ureteral infiltration in 7 pts
- Uterine fibromas in 4 pts
- Low compliance in 5 pts
- CT-RT related Toxicity in 3 pts
- Persistence/progression disease in 3 pts
- Comorbidities in 1 pt
- High risk of contamination in operating room in 1 pt

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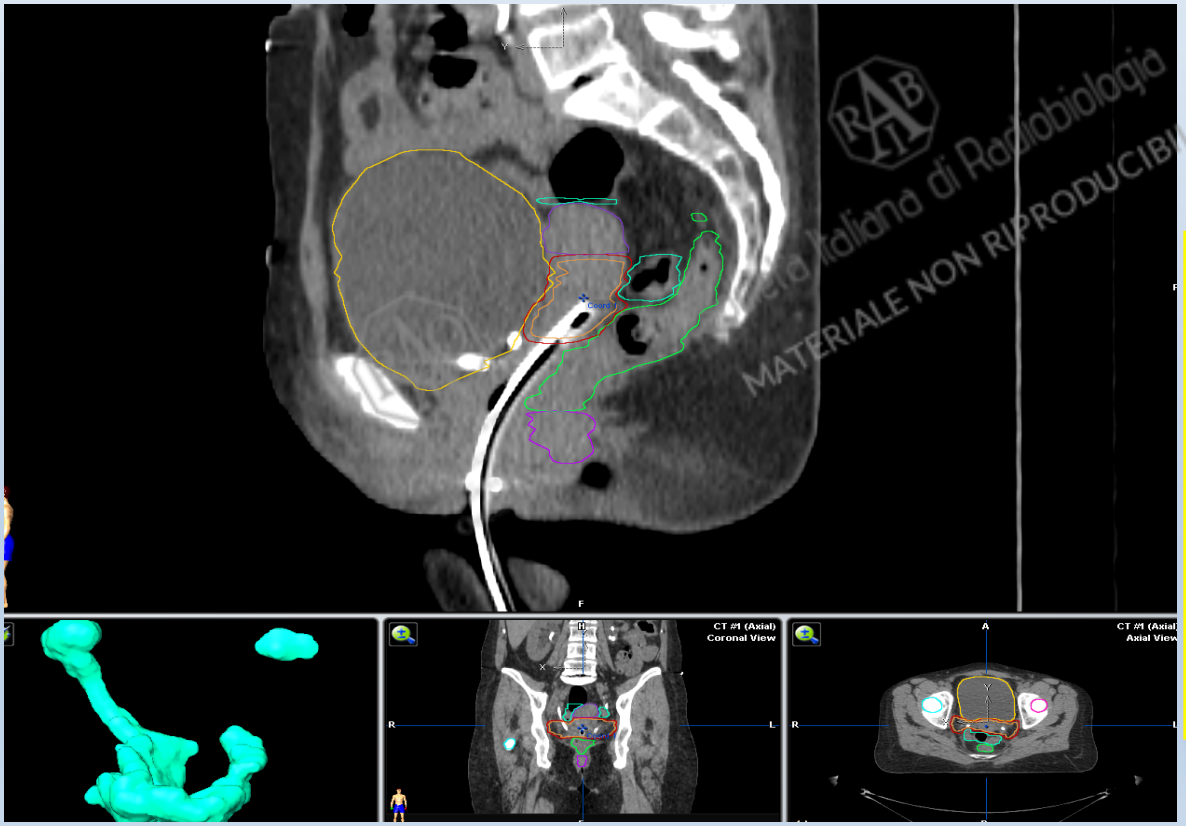
Pelvic MRI at the end of EBRT

GTV → CTV (initial volume) → PTV

(CTV + 3/5 mm)



Brainlab-Vero System

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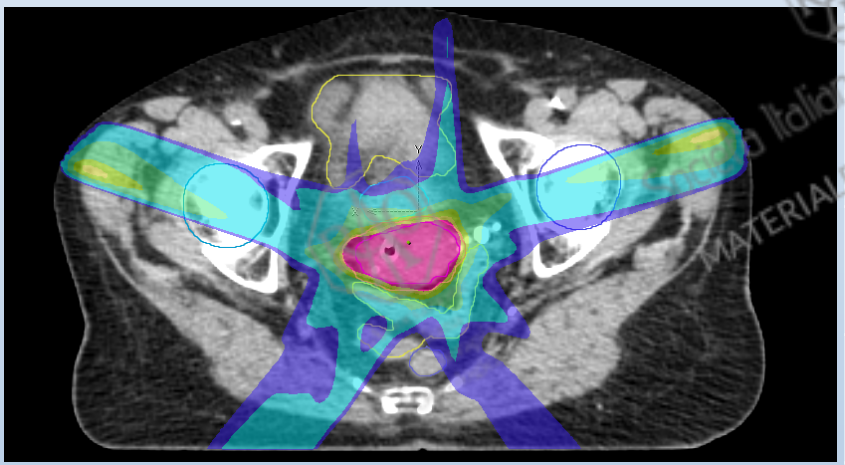
BOOST

Image-guided IMRT including the cervix +/- parametrium

- 5 or 7 fields
- Total dose of 20-25 Gy
- Median dose per fraction of 5 Gy (range: 2.5–8 Gy)
- Median overall treatment time: 79 days



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CONSTRAINTS

	Volume	Dose
PTV	V90	> 95% prescription dose
Bladder	2 cc	< 80% prescription dose
	1 cc	< 80% prescription dose
Rectum	2 cc	< 70% prescription dose
	1 cc	< 90%% prescription dose
Small bowel	2 cc	< 90%% prescription dose

Toxicity (CTCAE scale v 4.03)

ACUTE

	TOT PTS	G0	G1	G2	G3	G4
GU	**24**	**20 (83%)**	**3 (12%)**	**0**	**0**	**1 (5%)**

No patients developed gastrointestinal or genitourinary acute toxicity superior to Grade 2

CHRONIC

10 pts NED with follow-up > 6 months

7 pts → GU G0

8 pts → GI G0

1 pt → GI G1

Tumor control

21/ 24 pts

Median Follow-up = 13 months

Stage	NED	AWD	
		Local Disease	Distant Disease
IB1	1	-	-
IB2	1		
IIB	4		
IIIB	1	1	-
IVA			
IVB		4	
	= 12 pts 57%	= 9 pts 43%	

67% local control

58% local control in stage IV

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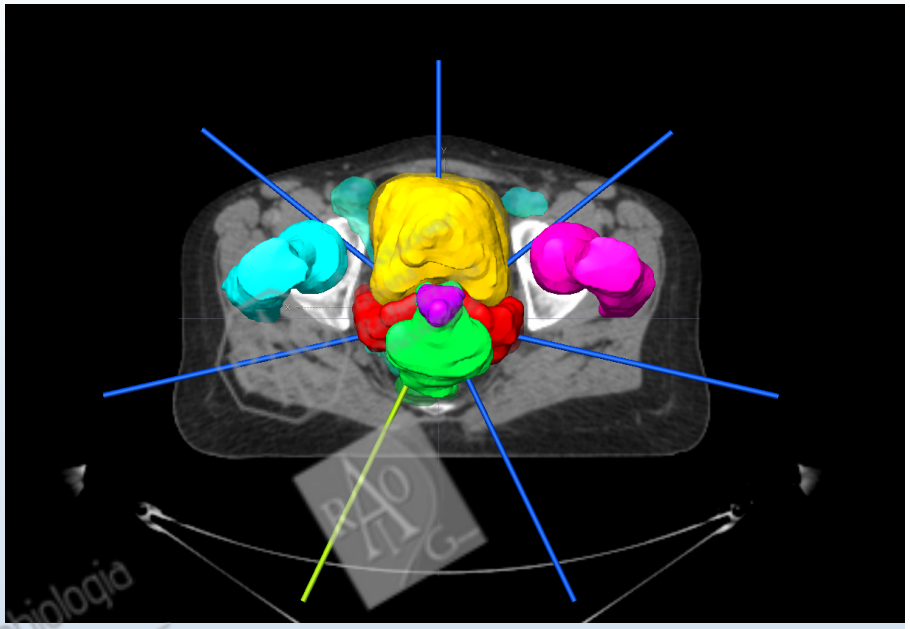
CRITICISMS:

- Small cohort
- Short Follow-up
- Heterogeneity of population (FIGO Stage)



BUT Homogeneus RT treatment

Conclusion

Non invasive therapy

Good local control

Low impact on quality of life

In pts unsuitable for brachytherapy

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Thanks for the attention