


XXXII CONGRESSO NAZIONALE AIRO
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XII CONGRESSO NAZIONALE AIRO GIOVANI

AIRO2022

Radioterapia di precisione per un'oncologia innovativa e sostenibile

BOLOGNA, 25-27 NOVEMBRE
PALAZZO DEI CONGRESSI

 Associazione Italiana
Radioterapia e Oncologia clinica

 Società Italiana di Radiobiologia

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COMPARISON OF TRANS-VAGINAL ULTRASOUND (TVUS) AND MAGNETIC RESONANCE IMAGING (MRI) FOR THE EVALUATION OF TUMOUR VOLUME IN LOCALLY ADVANCED CERVICAL CANCER TREATED WITH EXTERNAL BEAM RADIOTHERAPY (EBRT) AND BRACHYTHERAPY BOOST: PRELIMINARY ANALYSIS

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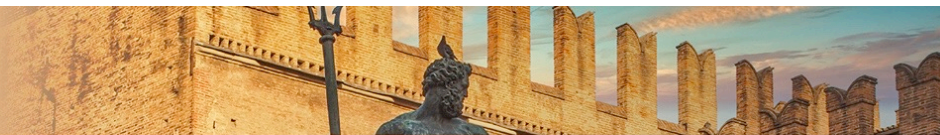
DICHIARAZIONE

Relatore: Federica Piccolo

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.

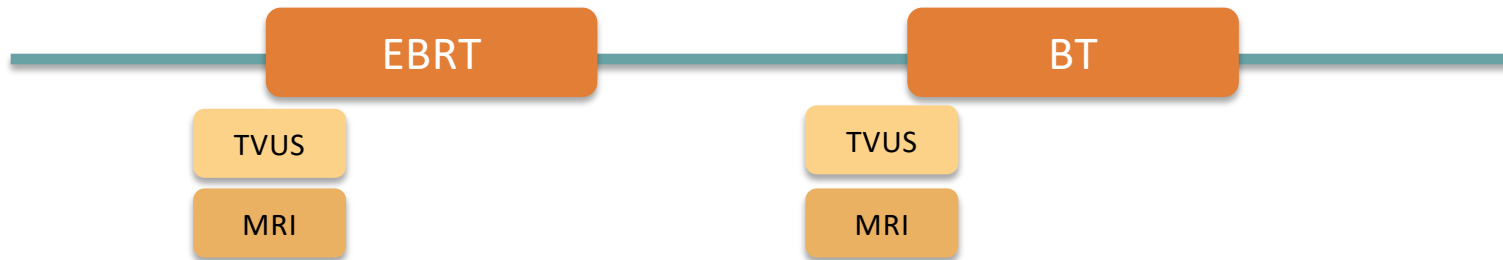
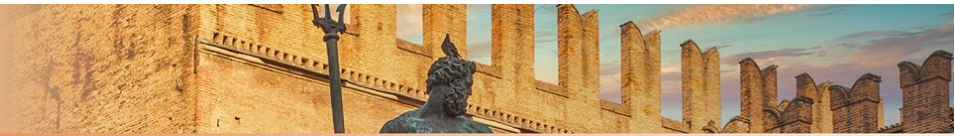
- Posizione di dipendente in aziende con interessi commerciali in campo sanitario :**NIENTE DA DICHIARARE**
- Consulenza ad aziende con interessi commerciali in campo sanitario: **NIENTE DA DICHIARARE**
- Fondi per la ricerca da aziende con interessi commerciali in campo sanitario :**NIENTE DA DICHIARARE**
- 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** Altro



COMPARISON OF TRANS-VAGINAL ULTRASOUND (TVUS) AND MAGNETIC RESONANCE IMAGING (MRI) FOR THE EVALUATION OF TUMOUR VOLUME IN LOCALLY ADVANCED CERVICAL CANCER

The aim of this study was to perform a blinded comparison between **TVUS** and **MRI** for the assessment of tumour volume at diagnosis and before the first boost brachytherapy (BT) application (without applicator in place) in a small cohort of 10 locally advanced cervical cancer patients.

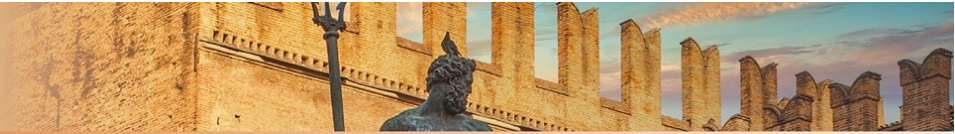


TVUS

- Ultrasound (US) has excellent soft tissue resolution, is affordable and has been used extensively in cervical cancer diagnosis.
- Ultrasound is an accessible and accurate imaging modality that can be used throughout the brachytherapy procedure.
- The most common use of ultrasound during brachytherapy for cervix cancer is to guide placement of the applicator into the uterine canal but can also be used for BT planning.

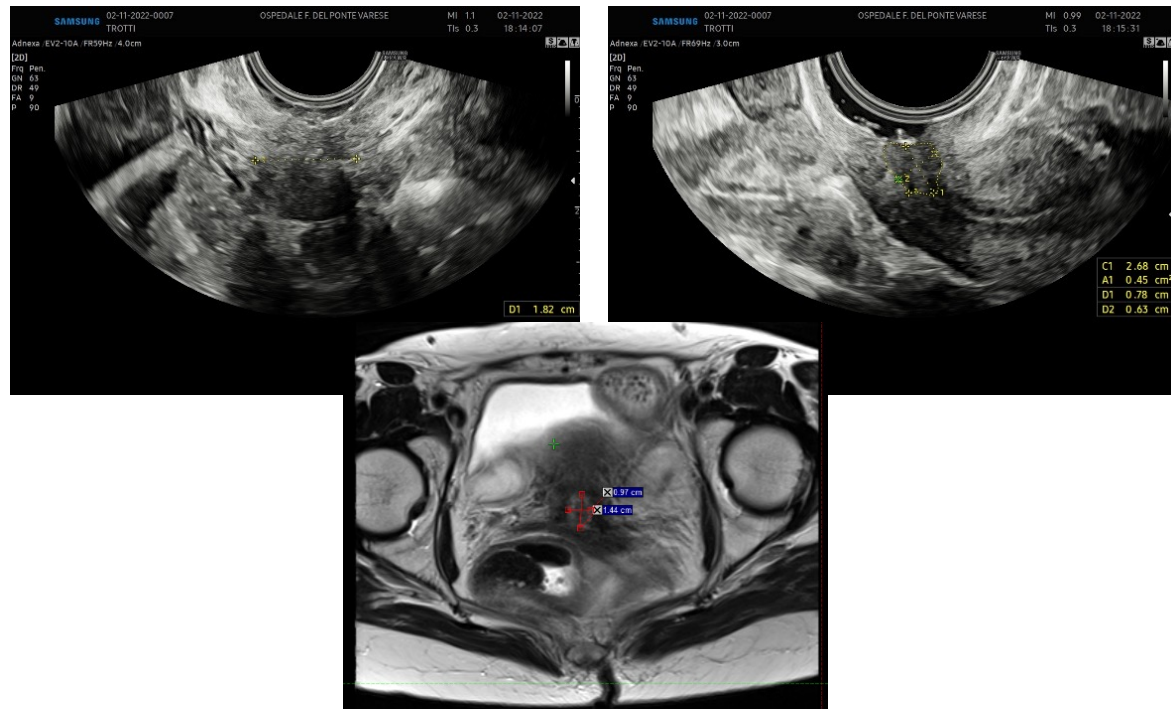
MRI

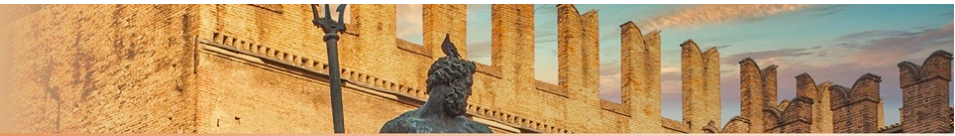
- AT DIAGNOSIS: Pelvic MRI with contrast assesses local disease extension and determines soft tissue and parametrial involvement.
- AFTER EBRT: MRI defines the tumor shrinkage and topography and it's used for BT pre-planning.
- IGABT: MRI with the applicators in situ is used as a gold standard.
- Its wide applicability is limited by its availability, logistics and financial implications.



We measured the **tumour volume** estimated on each **MRI** and **TVUS** study; the volume was calculated by using a rotational ellipsoid based on the three axis (CC, AP, LL) that was determined by dedicated physicians, radiologists and gynaecologists.

AGE	
Median	53,2 years
Range	47-60 years
HISTOLOGY	
Squamous cell	9
Adenocarcinoma	0
Clear cell	1
FIGO stage	
I B3	1
II B	6
III C1	3





The volumes measured on MRI and TVUS images taken before and after EBRT were compared. Statistical non parametric Wilcoxon test for paired data was used because the normality test assessed on data showed a non gaussian distribution.

Median Volumes (cm ³)			
	MRI	US	p (WILCOXON TEST)
Post-EBRT (sample size=9)	2,49	1,44	0,4258
Pre-EBRT (sample size=10)	26,015	19,15	0,0645

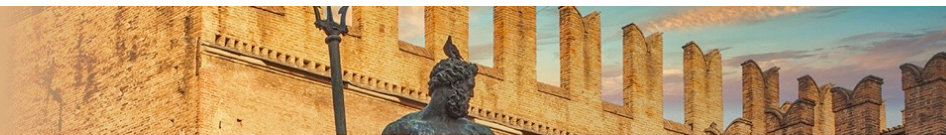
The results of our preliminary analysis are shown: no statistically differences between tumour volumes calculated on MRI and TVUS were found (p=0.4258; p=0.0645).

TVUS seems indeed to be potentially useful to evaluate tumour response after EBRT and also to perform BT pre-planning, provided that these findings are confirmed in larger series of pts.

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Grazie per l'attenzione