

XXXII CONGRESSO NAZIONALE AIRO
XXXIII CONGRESSO NAZIONALE AIRB
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

 Associazione
Italiana
Radioterapia
e Oncologia
clinica


XXXII CONGRESSO NAZIONALE AIRO
XXXIII CONGRESSO NAZIONALE AIRB
XII CONGRESSO NAZIONALE AIRO GIOVANI

AIRO2022

Radioterapia di precisione per un'oncologia innovativa e sostenibile

BOLOGNA, 25-27 NOVEMBRE
PALAZZO DEI CONGRESSI

A PROSPECTIVE STUDY ASSESSING THE PATTERN OF RESPONSE OF LOCAL DISEASE AT DCE-MRI AFTER SALVAGE RADIOTHERAPY FOR PROSTATE CANCER

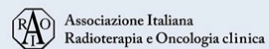
Bottero M, Faiella A, Giannarelli D, Farneti A, D'Urso P, Bertini L, Landoni V, Vici P, Sanguineti G.

Marta Bottero M.D.

Radiation Oncology

IRCCS, Regina Elena National Cancer Institute,
Rome, Italy

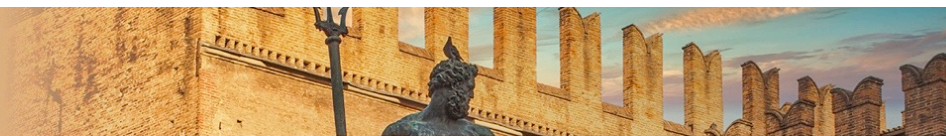
marta.bottero@ifo.it



AIRO2022

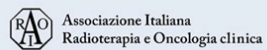
XXXII CONGRESSO NAZIONALE AIRO
XXXIII CONGRESSO NAZIONALE AIRB
XII CONGRESSO NAZIONALE AIRO GIOVANI

Radioterapia di precisione per un'oncologia innovativa e sostenibile



Conflict of interest:

No disclosure

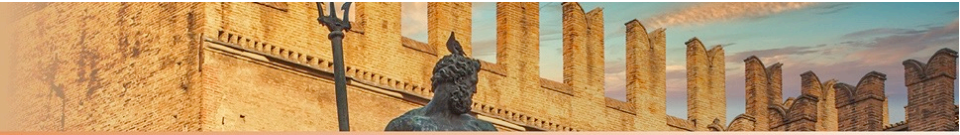


BOLOGNA, 25-27 NOVEMBRE
PALAZZO DEI CONGRESSI

AIRO2022

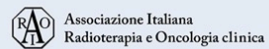
XXXII CONGRESSO NAZIONALE AIRO
XXXIII CONGRESSO NAZIONALE AIRB
XII CONGRESSO NAZIONALE AIRO GIOVANI

Radioterapia di precisione per un'oncologia innovativa e sostenibile



Aim:

To assess the pattern of response of presumed local lesions at dynamic contrast enhancement magnetic resonance imaging (DCE-MRI) in the setting of salvage radiotherapy (sRT) after radical prostatectomy (RP).



BOLOGNA, 25-27 NOVEMBRE
PALAZZO DEI CONGRESSI



Methods:

Study design

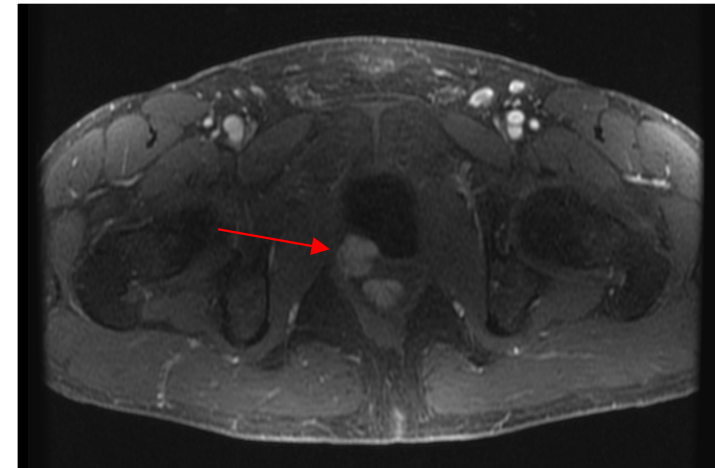
PROSPECTIVE STUDY (NCT04703543)

Single institution (IRE, August 2017-June 2020)

Eligibility criteria:

- Undetectable PSA after RP
- BCR (2 consec PSA \geq 0.2 ng/ml)
- **Local failure at DCE-MRI**
 (early/fast enhancing discrete lesion on DCE seq)
- no distant M+ at FCH and/or PSMA-PET/CT
- no previous history of ADT and/or RT

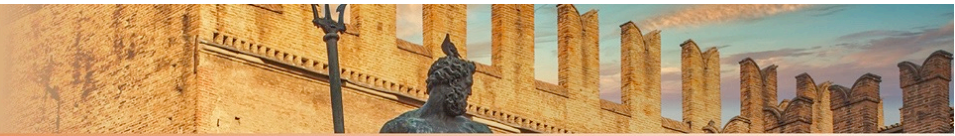
mpMRI: DCE sequence



PRIMARY ENDPOINT:

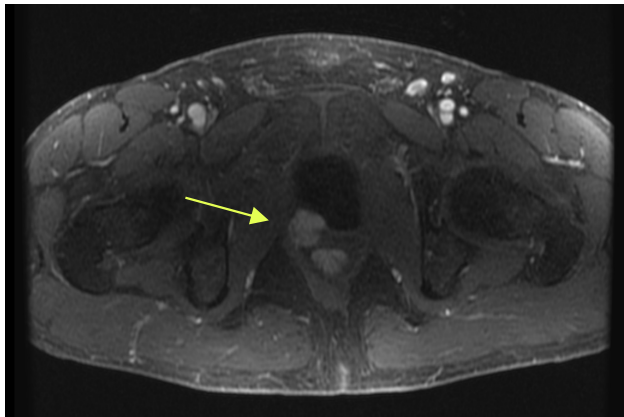


CR = complete disappearance of the target lesion at MRI



Methods:

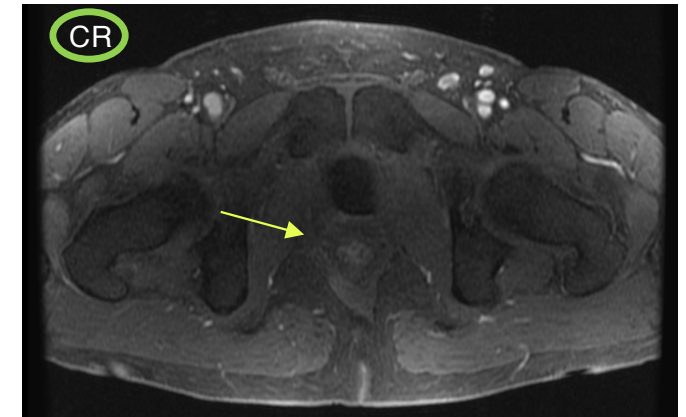
ENROLLMENT



TREATMENT: sRT



RESPONSE EVALUATION:
DCE-MRI



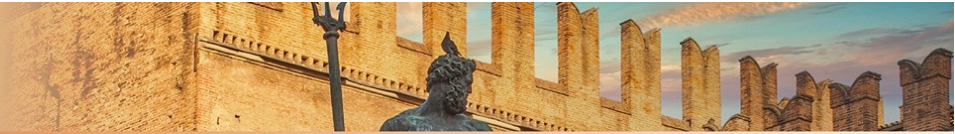
Nodule @mpMRI
(DCE seq)



73.5 Gy/30 fx: DCE-MRI local failure
 69 Gy/30 fx: PB
 +/- 54 Gy/30 fx: pelvic N



3 month interval after sRT
 until CR or 4 scans max



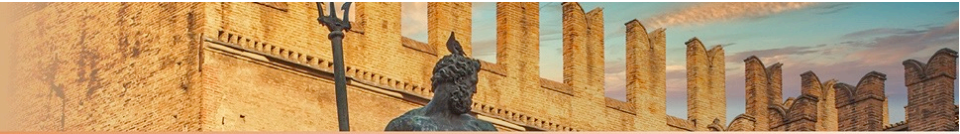
Results:

62 patients

72 nodules

Summary of findings at DCE-MRI

| | A | B | A-B | | | | |
|-----------------|---------------------------|----------------------------|-----------------------------|--|-------------------|-------------|------------------|
| Re-ev # | Patients due for scanning | noCR not further evaluated | # patients actually scanned | Median time (mths) of scan after sRT (IQR) | Complete Response | No Response | Partial Response |
| | (#) | (#) | (#) | (months) | (#) | (#) | (#) |
| 1 st | 62 | 0 | 62 | 3.3 (3.1-4.1) | 33 | 2 | 27 |
| 2 nd | 29 | 1 | 28 | 6.8 (6.5-7.6) | 20 | 0 | 8 |
| 3 rd | 9 | 3 | 6 | 10.7 (10.6-12.6) | 4 | 0 | 2 |
| 4 th | 5 | 4 | 1 | 16.7 | 1 | 0 | 0 |



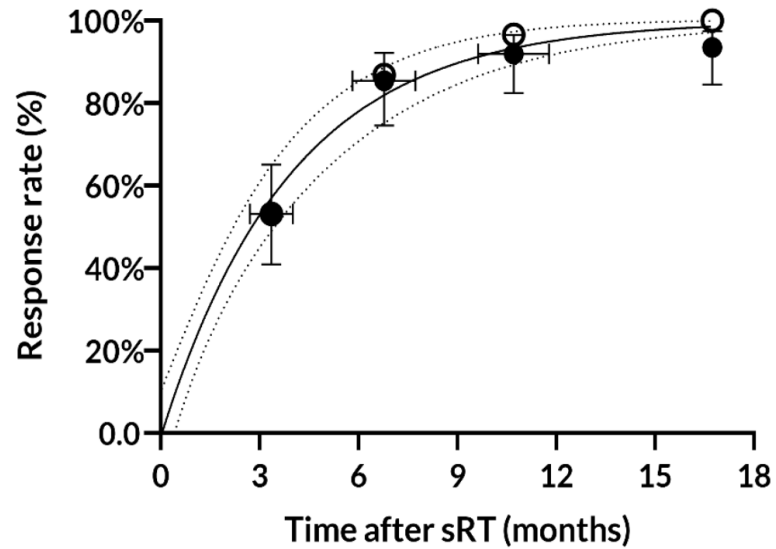
Results:

Actual/actuarial CR-rates (95% CI) at each reevaluation

Lesion not rescanned:

ACTUAL METHOD:
 persisting PR (solid circles)

ACTUARIAL METHOD:
 missing observation (empty circles)



| Re-evaluation # | 1 | 2 | 3 | 4 |
|-----------------|----|------------|------------|------------|
| # Patients | 62 | 62 (61) | 62 (59) | 62 (58) |



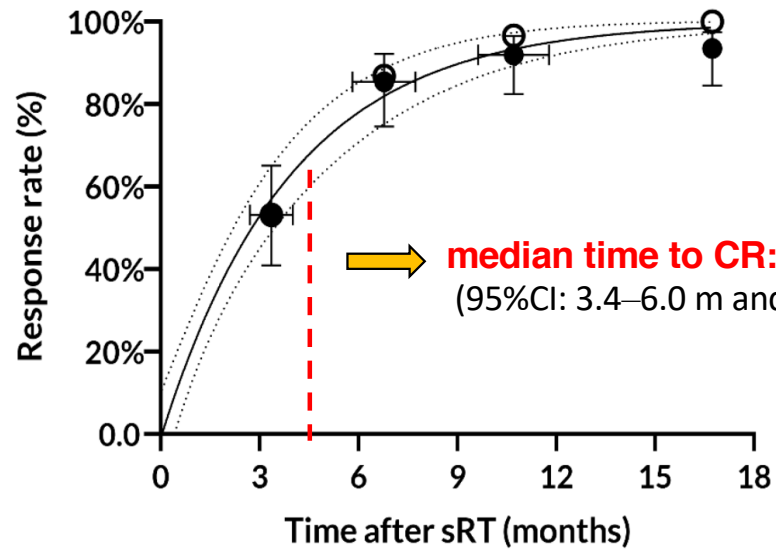
Results:

Actual/actuarial CR-rates (95% CI) at each reevaluation

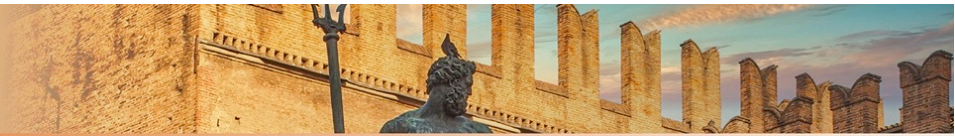
Lesion not rescanned:

ACTUAL METHOD:
 persisting PR (solid circles)

ACTUARIAL METHOD:
 missing observation (empty circles)



| Re-evaluation # | 1 | 2 | 3 | 4 |
|-----------------|----|------------|------------|------------|
| # Patients | 62 | 62 (61) | 62 (59) | 62 (58) |



Results:

Logistic Regression on CR at 1st re-evaluation

| Covariate | Strata | # patients | Univariable | | | Multivariable | | |
|---------------------------------------|------------------|------------|--------------|--------------------|--------------|---------------|--------------------|--------------|
| | | | OR | 95%CI | p value | OR | 95%CI | p value |
| Volume @ mpMR (cc) | Continuum | 62 | 0.207 | 0.045-0.958 | 0.044 | 0.076 | 0.009-0.667 | 0.020 |
| PSADT (mths) | Continuum | 62 | 0.977 | 0.948-1.006 | 0.120 | | | |
| PSA @ fail (ng/ml) | Continuum | 62 | 0.843 | 0.558-1.274 | 0.418 | | | |
| Site failure Anastomosis | No | 25 | 1 | | | | | |
| | Yes | 37 | 1.422 | 0.513-3.940 | 0.498 | | | |
| Site failure Bladder Neck | No | 45 | 1 | | | | | |
| | Yes | 17 | 0.512 | 0.165-1.588 | 0.246 | | | |
| Site failure Retrovesical | No | 47 | 1 | | | | | |
| | Yes | 15 | 1.437 | 0.441-4.682 | 0.547 | | | |
| Time RP/sRT (mths) | Continuum | 62 | 0.991 | 0.980-1.002 | 0.117 | | | |
| GGG | 1-2 | 29 | 1 | | | | | |
| | 3 | 25 | 0.880 | 0.301-2.574 | 0.816 | | | |
| | 4-5 | 8 | 0.813 | 0.169-3.895 | 0.795 | | | |
| Time from sRT (mths) | Continuum | 62 | 2.472 | 1.050-5.818 | 0.038 | 3.399 | 1.156-9.993 | 0.026 |
| PSA decrease @ wk 5 (%) | Continuum | 62 | 1.026 | 1.003-1.049 | 0.024 | 1.025 | 0.999-1.050 | 0.058 |
| PSA decrease @ 1 st ev (%) | Continuum | 62 | 1.025 | 0.998-1.052 | 0.067 | | | |
| # Failures | 1 | 53 | 1 | | | | | |
| | 2-3 | 9 | 1.116 | 0.269-4.622 | 0.880 | | | |
| Pelvic node coverage | No | 33 | 1 | | | | | |
| | Yes | 29 | 0.893 | 0.328-2.427 | 0.824 | | | |

Independent predictors:

- ➔ VOLUME @mpMRI
- ➔ TIME from sRT



Conclusion:

- The vast majority of local lesions disappears at DCE-MRI after dose-escalated sRT
- The timing of CR is at least in part predictable based on the volume of the nodule and larger lesions may require more than 10 months from treatment end.
- sRT is highly effective in obtaining the CR of local lesions, though longer fup is needed to confirm these results.