



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

AIRO2022

Radioterapia di precisione per un'oncologia innovativa e sostenibile

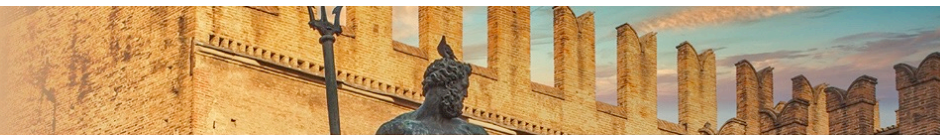
BOLOGNA, 25-27 NOVEMBRE
PALAZZO DEI CONGRESSI

Radionecrosis versus progression in brain tumors: results of a promising MRI tool

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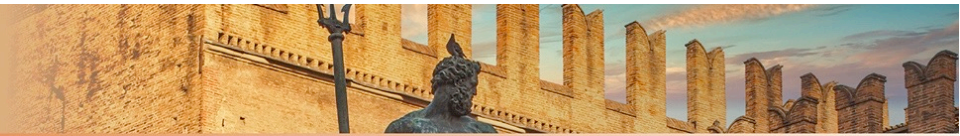


DICHIARAZIONE

Relatore: Beatrice Marini

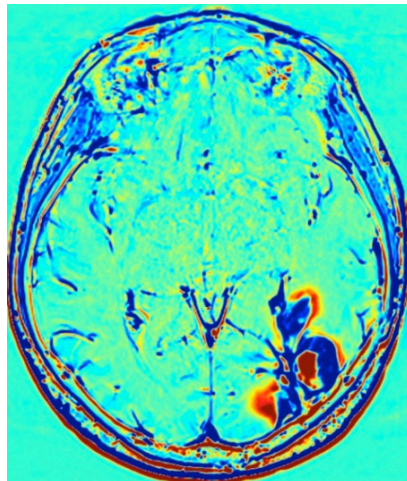
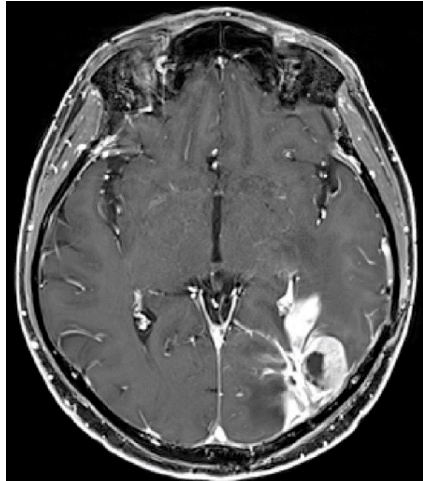
Come da nuova regolamentazione della Commissione Nazionale per la Formazione Continua del Ministero della Salute, è richiesta la trasparenza delle fonti di finanziamento e dei rapporti con soggetti portatori di interessi commerciali in campo sanitario.

- 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



Treatment effect versus tumor progression: a **diagnostic challenge**

Aim of the study: to assess TRAM's ability to differentiate between RN and tumor progression in a small cohort of brain tumor patients treated with radiotherapy (RT).



Blue/tumor regions = efficient clearance of contrast from the tissue (delayed signal < early signal)

Red/nontumor regions = contrast accumulation (delayed signal > early signal).



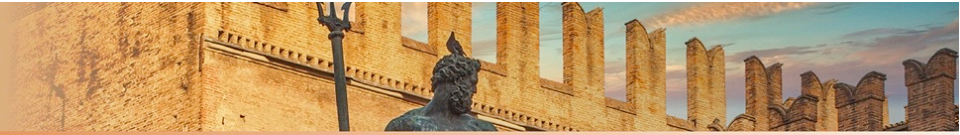
MATERIALS AND METHODS

Patients previously treated in our Institution
Both primary tumors and secondary tumors
Equivocal radiological imaging changes after cranial RT

Studied by TRAMs and PWI MRI

Elaborated into the dedicated software ([*Brainlab AG*, Olof-Palme-Straße 9, 81829 Munich]).

TRAMs map: subtracting T1 MRI images acquired 5 minutes after contrast injection from the T1 MRI images acquired 60-105 minutes later.



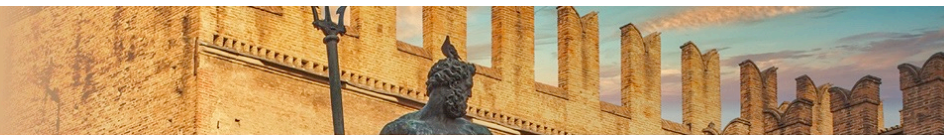
RESULTS

From February 2021 to May 2022 35 patients enrolled

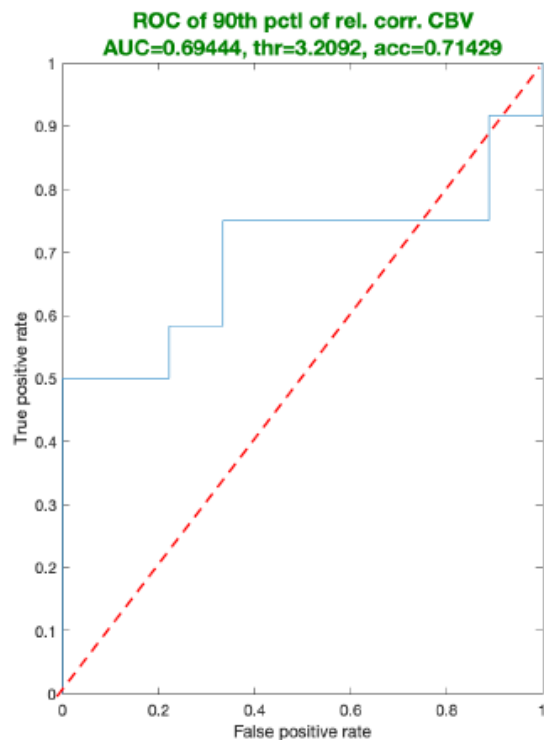
- **14 patients:** primary brain tumors
surgery - RT - concomitant and/or adjuvant TMZ
- **21 patients** : 37 brain metastases (NSCLC, Melanoma, Breast cancer)
SRS (20-24Gy in 1fr), or HSRS (27-30Gy in 3fr)

11 patients underwent to surgical resection

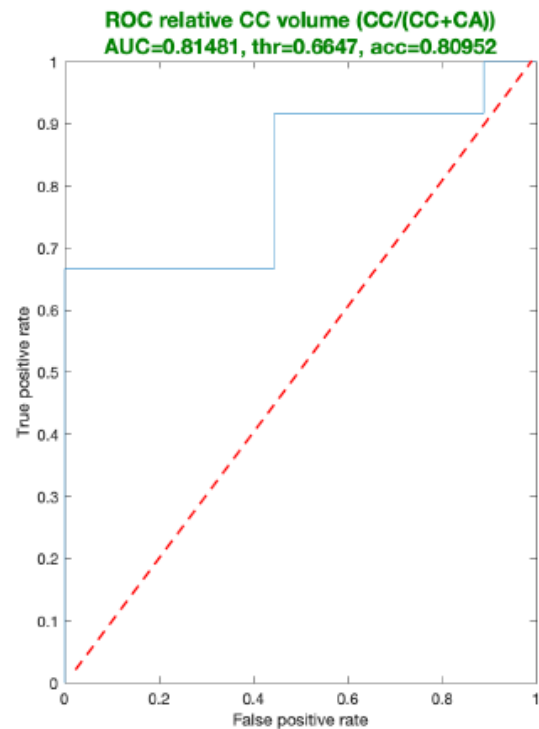
TRAMs analysis has shown a fair agreement with clinicoradiologic diagnosis,
perfusion-weighted MRI



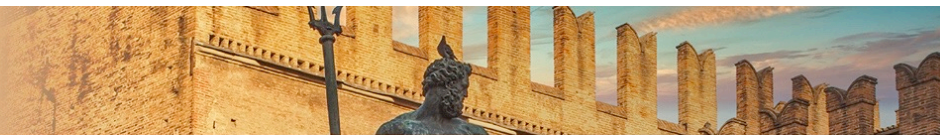
RESULTS



MRI perfusion accuracy rate = 0.69



TRAM's accuracy rate = 0.81



CONCLUSIONS

TRAMs analysis has shown a fair agreement with clinicoradiologic diagnosis and perfusion-weighted MRI

Advantages:

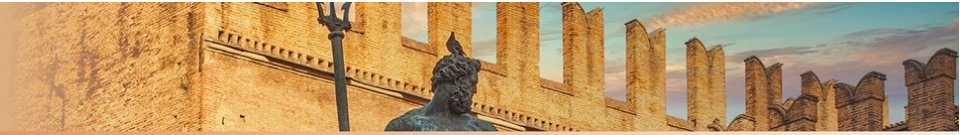
- Simple to be acquired
- Low sensitivity to susceptibility artifacts
- High resolution and sensitivity
- Improve patient management

Recruitment of new patients continues, and further evaluations are ongoing

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Thanks for your attention

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