The INSIDE Clinical Trial is designed to test the effectiveness and potential benefits of an on-line treatment verification device for a better optimization of proton (IMPT) and carbon ion (CIRT) radiotherapy. An innovative bi-modal instrumentation [1,2] installed at the CNAO - National Centre of Oncological Hadrontherapy, in Pavia, monitors the particle range by collecting the passive signals generated by the interaction between the primary beam and human tissues. 40 patients treated at the CNAO (20 with IMPT and 20 with CIRT) affected by selected tissues. 40 patients treated at the CNAO (20 with IMPT) and 20 with CIRT) affected by selected tissues.

The first two patients included in the INSIDE clinical trial were monitored in July-August 2019 and no morphological changes, relevant for clinical point of view, were detected into the in-vivo treatment verification in particle therapy.

### ClinicalTrials.gov ID: NCT03662373

**Inclusion criteria**
- Patients affected by meningioma or Squamous Cell Carcinoma (SCC) treated with IMPT
- Patients affected by Adenoid Cystic Carcinoma (ACC) or skull base (clivus) chondroma treated with CIRT

**Full compatibility of the INSIDE system with clinical and emergency procedures**
- Signed written informed consent

### Squamous Cell Carcinoma - IMPT

Patient treated with 2 fields (0° and 270° IEC) 27 sessions - target dose = 54 Gy RT dose- total RT dose first irradi field PET

### Adenoid Cystic Carcinoma - CIRT

Patient treated with 3 fields (0° - 270° - 180° IEC) 9 sessions CTV low dose + 7 sessions CTV high dose RT dose- total RT dose first irradi field PET

### References


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