
XXXIII CONGRESSO NAZIONALE AIRO
AIRO2023
BOLOGNA,
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PALAZZO DEI CONGRESSI
Radioterapia Oncologica: l'evoluzione al servizio dei pazienti
Associazione Italiana
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RE-IRRADIAZIONE DELLE RECIDIVE DI RETTO CON PENCIL BEAM SCANNING PROTON THERAPY: ESPERIENZA MONOCENTRICA

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Aims

4 % to 13 % of patients with Rectal Cancer (RC) experience recurrence in the pelvis
Salvage treatments often presents high risk of complications
Proton Therapy (PT) could minimize the risk of side effects compared to conventional photon therapy
We report our institutional experience on re-irradiation with PT for rectal cancer recurrences

Methods

16 patients with RC Recurrence (RCR) and prior pelvic RT received pencil beam scanning (PBS)-PT reirradiation
The median reirradiation dose was 50 GyRBE (range, 39.6-50.4 GyRBE). Median time between first radiotherapy and re-irradiation with PT was 49 months (range, 15-166 months)
Gross Tumor Volume (GTV) was defined on T1-weighted MRI images. Clinical target volume (CTV) included GTV + 5-10 mm
Median PTV (planning target volume) was 334 cc
The primary outcome measure was local control (LC). Secondary outcomes included overall survival (OS) and treatment-related toxicity

Results

No G≥3 acute toxicities were reported, except a case of G3 ureteral stenosis (6%)
Five patients (32%) experienced grade < 3 late toxicities including grade 2 pain (12%, in both cases cumulative doses received by the lumbosacral plexus were D1 > 100 GyRBE), grade 2 fatigue (6%), grade 1 erythema (6%) and grade 1 constipation (6%)
After a mean follow-up of 3.6 years (range, 0–7 years) 1-year and 3-year LC were 80 and 69%, respectively. 1-year and 3-year OS were 94% and 60%, respectively

Conclusion

PT as re-irradiation for locally recurrent rectal cancer seems to be a safe and valid treatment with an acceptable rate of morbidity of surrounding healthy tissue and good local control. Longer follow-up is necessary to assess definitive efficacy and to determine organs at risk's cumulative doses constraints to be better respected using proton beam characteristics

Figure 1. X-Ray 3DCRT (Photons First Treatment)

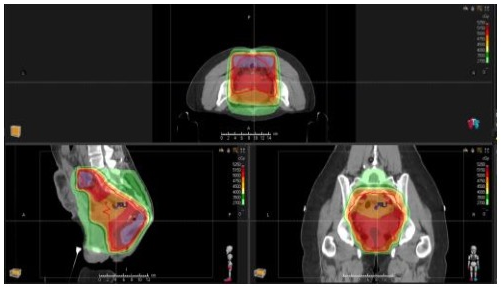

Figure 2. Proton Therapy Reirradiation Planning Treatment