RE-IRRADIATION USING PARTICLE THERAPY FOR PELVIC RECURRENCE OF GYNECOLOGICAL CANCER

A. Barcellini¹, V. Vitolo¹, M.R. Fiore², B. Vischioni¹, A. Iannalfi¹, S. Ronchi¹, E. D’Ippolito¹, R. Petrucci¹, F. Valvo¹, R. Orecchia¹,²

1) National Center of Oncological Hadrontherapy (CNAO), Pavia, Italy 2) European Institute of Oncology, Milano, Italy

Background: Recurring gynecological tumors of the pelvic area within or at the edge of a previously irradiated field are often in close proximity to the intestinal tract. When the surgery is not possible, re-irradiation can be reasonably used. Re-irradiation presents challenges due to the high cumulative dose and the risk of severe toxicities in normal tissues. Particle therapy (with carbon ions and protons) is a promising alternative for these women.

Aim: To report our preliminary experience on feasibility and toxicity of particle therapy in previously irradiated patients with pelvic recurrences of gynecological cancer.

Methods
Between May 2014 and May 2019, 11 patients with gynecological recurrent tumor within or at the edge of the previously irradiated field were admitted for particle therapy at CNAO. They had recurrence of cervical (5), endometrial (4), corpus uteri (1) and ovarian (1) cancer.

Two patients, with marginal lymph node recurrence, were irradiated with protons with up to a total dose of 25 GyRBE and 51 GyRBE respectively. The remaining women underwent to carbon-ion radiotherapy with a median total dose of 50 GyRBE (range: 36-57) administered in a median number of 12 fractions.

Seven patients with pelvic side wall recurrences received surgical spacer placement by open surgery to keep intestinal tracts apart from the tumor, as the distance between tumor and nearest intestinal tracts was not sufficient. Toxicity was scored according CTCAE 4.0 scale.

Results
All patients completed the planned treatment and no acute toxicities (CTCAE 4.0) G≥2 were observed.

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For patients with a follow-up ≥ 3 months, median LC was 9 months (range: 6-14), median MFS was 7 months (range: 3-21) and median OS was 9 months (range: 6-20). 1 patient experienced local progression and 4 patients died for systemic progression. Patient recruitment and data are still ongoing.

Conclusions: Although the study's limitations, particle therapy showed no severe toxicities for recurrence of gynecological cancers after RT. Unfortunately, patients with large recurrence volume in central or pelvic side wall have poor prognoses therefore efforts should be made to detect pelvic recurrences early. A strong collaboration between Gynecologic Oncologists and Radiation Oncologists is of upmost importance to make a step forward in the treatment of these diseases. Hence, hadrontherapy for pelvic recurrences should be further investigated in a prospective and multicenter trial.