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Digital Poster

Fertility preservation in patients undergoing pelvic radiotherapy

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Purpose/Objective:
Advances in oncology have led to increasingly earlier diagnosis and better survival rates (1). Combined with the current trend towards postponing parenthood, there will be more and more cancer survivors of childbearing age (2). The impact of pelvic radiotherapy on patients' fertility is making oncofertility an emerging clinical area. It is therefore essential that patients have the opportunity to discuss fertility preservation before treatment (3). This study aims (i) to assess whether the doses to the gonads of the 70 patients met the tolerance doses used in radiotherapy planning; (ii) to compare the 3DCRT with the VMAT techniques; (iii) to verify whether ovarian transposition reduces the dose to the ovaries.

Material/Methods:
A retrospective analysis of 70 patients, 58 females and 12 males, who underwent pelvic radiotherapy, aged 45 or under, between 2014 and 2023, in the radiotherapy department of the Unidade Local de Saúde de Coimbra, was carried out. The dose constraints taken into account are from the project Dose-Volume Constraints for Organs at Risk in Radiotherapy (4). Statistical analysis was carried out using IBM SPSS Statistics software, version 29.0.2. The results were considered significant at a 5% significance level.

Results:
Of the 70 patients studied 12 were males with rectal tumors, 18 were females with rectal tumors and 40 were females with gynecological tumors. The average age of all study patients was 38,76 years old and the standard deviation was 6. The average number of children was 1,25 and the standard deviation was 1.40. Of these 70 patients, 58,6% of patients were treated with the VMAT technique, only 18,6% of patients meet the maximum dose limits and 22,9% meet the mean dose limits in the testicles and ovaries. In the total sample, only 5 females underwent ovarian transposition. No statistically significant differences were detected regarding the left and right gonads, neither 3DCRT and VMAT (p'>0.05). There are statistically significant differences between female patients who underwent ovarian transposition and those who did not perform ovarian transposition, regarding maximum and medium doses in both right and left ovaries (p'<0,05), with a dose reduction that can average up to 39 Gy.

Conclusion:
In conclusion, it is recommended that parenthood be discussed before starting treatment, that the gonads be considered as an organ at risk in the dosimetric planning of radiotherapy, and that the VMAT technique and ovarian transposition be used whenever possible to reduce the impact of radiotherapy on patients' fertility.

Keywords: Fertility preservation, ovarian transposition

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