

Comparison of outcomes and toxicity between extreme and moderate radiotherapy hypofractionation in localized prostate cancer: a propensity score analysis



Propensity score analysis hypofractionated RT



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AIM

To compare clinical outcomes and toxicities of two hypofractionated image-guided intensity modulated radiotherapy (IG-IMRT) regimens for the treatment of organconfined prostate cancer (PCa). Specifically, we compared to RT schemes: the extremely hypofractionated (EH) and the moderately hypofractionated (MH). A propensity score method was used in order to compare the EH-RT and MH-RT groups.

PATIENTS AND METHODS

421 patients, divided in two groups: 227 PCa patients treated with MH-RT, and 194 treated with EH-RT. Propensity matching was applied to create comparable cohorts in term of prognostic factors. Statistical evaluations were performed on the whole cohort, stratifying the analyses by risk strata factors identified with the propensity scores, and on a subgroup of patients matched by propensity score. Multivariate Proportional Hazard Cox models were used to compare the two groups for overall survival (OS), clinical progression free survival (cPFS) and biochemical PFS (bPFS), gastro-intestinal (GI) and genito-urinary (GU) toxicity.

RESULTS

Whole population: no statistically significant differences for bPFS, cBFS and OS between the two groups (MH vs EH) [Fig 1]. Toxicity: acute GU > Grade 1 more frequent in the whole MH-RT group ($p < 0.001$).

Following propensity score matching 113 patients for each group were included in the analysis. The two propensity score matched groups did not differ for any of the clinical and pathological variables, resulting well balanced.

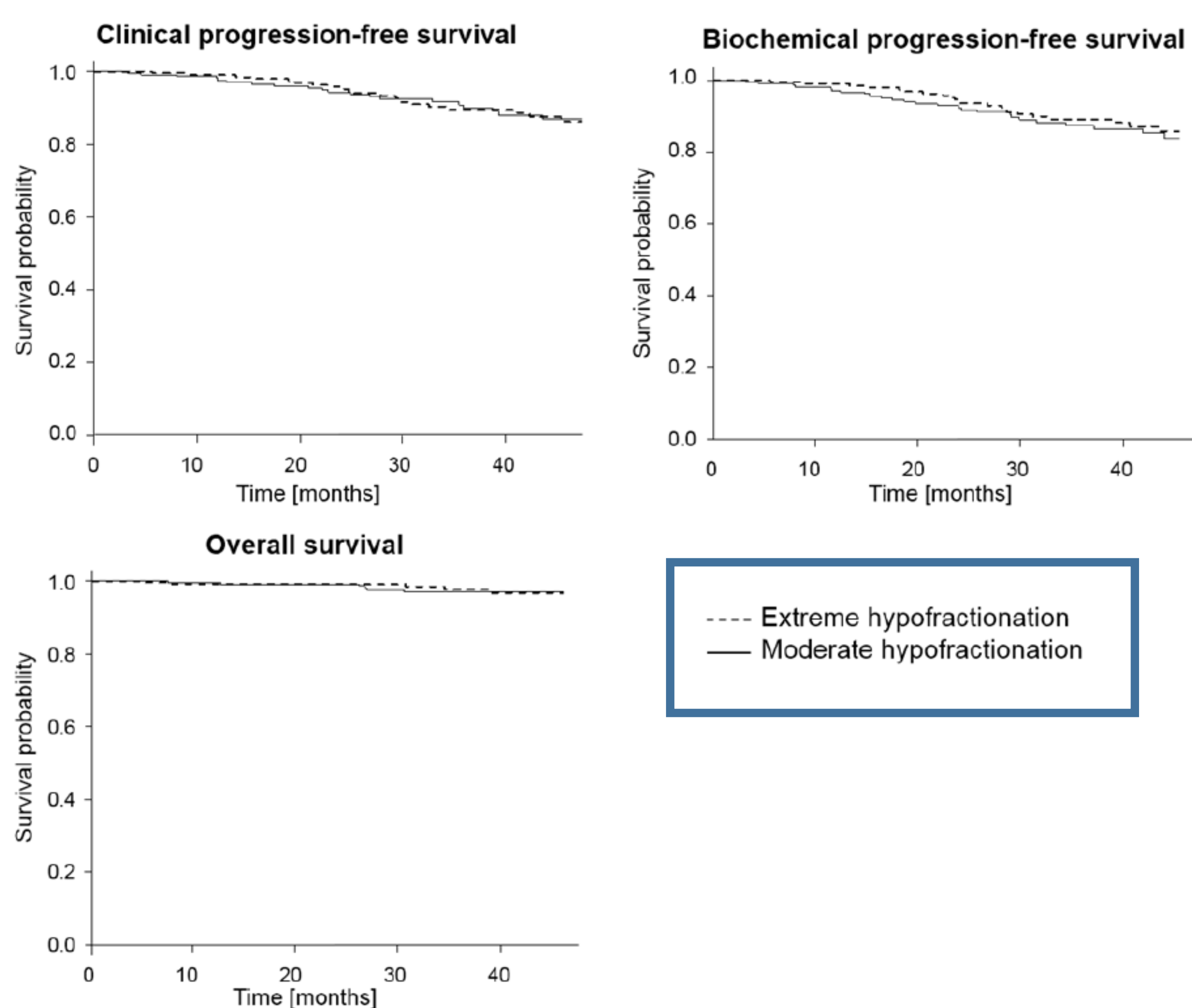


Fig. 1 Univariate analysis for cBFS, bPFS and OS by EH and MH

CONCLUSIONS

EH-RT did not yield to an increased risk of either acute or late GU and GI toxicities as compared to MH-RT and oncological outcomes were comparable. Based on our data, EH-RT might be considered as the treatment modality of choice for selected PCa cancer patients.