COST-EFFECTIVENESS ANALYSIS OF FOUR VALIDATED TECHNIQUES OF ACCELERATED PARTIAL BREAST IRRADIATION FOR THE TREATMENT OF EARLY-STAGE BREAST CANCER: SPANISH PUBLIC HEALTH SYSTEM STANDARD ESTIMATIONS

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OBJECTIVES: Partial breast irradiation (PBI) can be a safe alternative to standard whole breast irradiation (WBI) in favourable early breast cancer and, profitably, is delivered in a shorter time. Four different techniques have been described in randomized trials (follow-up > 4 years): intraoperative-radiotherapy (IORT), delivered at the time of tumorectomy, low-dose-rate brachytherapy (LDR), delivered in 3 days, and high-dose-rate (HDR) and high-dose-rate brachytherapy (HDR), both delivered in 5 days. For comparison, WBI is delivered in seven weeks. The objective of this study was to compare the cost-effectiveness of the 4 different technical approaches to PBI, for the treatment of selected favourable early stage breast cancer patients, using current cost estimations within the Spanish Public Health System.

METHODS: A decision-analysis model was performed using efficacy data from previous prospective trials, calculated in years without mastectomy (YWM). Direct costs were estimated based on charges applied by Madrid’s Autonomous Community, and were expressed in Euros ($). For each modality of PBI, local recurrence rates where individualized, and charges weighted for the frequency of its occurrence. A probabilistic sensitivity analysis was conducted to evaluate the robustness of the results. RESULTS: The total cost of $548.25 was estimated for LDR, $482.15 for IORT, $895.71 for HDR and $2709.41 for YWM. All brachytherapy techniques (LDR and HDR) were dominated. Sensitivity analysis showed that ICER depends mainly on recurrence level after treatment and, also on IORT costs. CONCLUSIONS: In a Spanish Public Health Care scenario, IORT showed the most cost-effective results for early breast cancer and, due to its intrasurgical administration (same hospital admission required for surgery), should be considered a compelling alternative, in particular for patients with complex transportation demands to access radiotherapy facilities.

COST-EFFECTIVENESS OF A PREDICTIVE TEST OF THE BENEFIT OF CHEMOTHERAPY

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OBJECTIVES: In breast cancer, adjuvant chemotherapy is often prescribed as a precautionary measure and sometimes unnecessarily. A diagnostic test based on an analysis of 21 genes estimating the risk of recurrence at 10 years for women with early stage breast cancer in France has been developed (Oncotype-DX®). A cost-effectiveness analysis of 21 genes estimating the risk of recurrence at 10 years for women with early stage breast cancer in France. A cost-effectiveness analysis was used to determine the necessary size of the additional health benefits and outcomes measured as quality-adjusted life years (QALYs). Threshold analysis was used to establish the necessary size of the additional health benefits and outcomes measured as quality-adjusted life years (QALYs). Threshold analysis was used to establish the necessary size of the additional health benefits and outcomes measured as quality-adjusted life years (QALYs). Threshold analysis was used to establish the necessary size of the additional health benefits and outcomes measured as quality-adjusted life years (QALYs). Threshold analysis was used to establish the necessary size of the additional health benefits and outcomes measured as quality-adjusted life years (QALYs). Threshold analysis was used to establish the necessary size of the additional health benefits and outcomes measured as quality-adjusted life years (QALYs). Threshold analysis was used to establish the necessary size of the additional health benefits and outcomes measured as quality-adjusted life years (QALYs). Threshold analysis was used to establish the necessary size of the additional health benefits and outcomes measured as quality-adjusted life years (QALYs). Threshold analysis was used to establish the necessary size of the additional health benefits and outcomes measured as quality-adjusted life years (QALYs). Threshold analysis was used to establish the necessary size of the additional health benefits and outcomes measured as quality-adjusted life years (QALYs). Threshold analysis was used to establish the necessary size of the additional health benefits and outcomes measured as quality-adjusted life years (QALYs). Threshold analysis was used to establish the necessary size of the additional health benefits and outcomes measured as quality-adjusted life years (QALYs). Threshold analysis was used to establish the necessary size of the additional health benefits and outcomes measured as quality-adjusted life years (QALYs). Threshold analysis was used to establish the necessary size of the additional health benefits and outcomes measured as quality-adjusted life years (QALYs). Threshold analysis was used to establish the necessary size of the additional health benefits and outcomes measured as quality-adjusted life years (QALYs). Threshold analysis was used to establish the necessary size of the additional health benefits and outcomes measured as quality-adjusted life years (QALYs). Threshold analysis was used to establish the necessary size of the additional health benefits and outcomes measured as quality-adjusted life years (QALYs). Threshold analysis was used to establish the necessary size of the additional health benefits and outcomes measured as quality-adjusted life years (QALYs). Threshold analysis was used to establish the necessary size of the additional health benefits and outcomes measured as quality-adjusted life years (QALYs). Threshold analysis was used to establish the necessary size of the additional health benefits and outcomes measured as quality-adjusted life years (QALYs).

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