

PERSEPHONE; 6 vs. 12 months of adjuvant trastuzumab in patients with HER2+ early breast cancer: A cost effectiveness analysis.

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Adjuvant trastuzumab has significantly improved outcomes for HER2+ EBC, using the 12m duration empirically adopted from pivotal registration trials. Given an annual per patient cost of trastuzumab treatment of over £30,000, a shorter duration has the potential to improve cost-effectiveness if efficacy is maintained.

This cost-effectiveness analysis was based on data from the PERSEPHONE trial, a phase III non-inferiority RCT comparing 6 to 12m Trastuzumab, the largest reduced-duration non-inferiority trial internationally. A landmark analysis 6 months into treatment was conducted, comparing costs and quality of life throughout follow-up (6m – 24m post treatment start). Multiple imputation was required to impute incomplete quality of life data. Quality Adjusted Life Years (QALYs) were adjusted for differences at baseline. Uncertainty is estimated using the non-parametric bootstrap method. 4009 patients were disease free at 6m (6m: n=2000, 12m: n=2009) and therefore eligible for the analysis. The average costs for an individual in the 6m arm and 12 month arm were £2,538.64 (95% CI: £2,383.38 - £2700.72) and £12,333.83 (95% CI: £12,098.58 - £12,562.27), respectively, giving an average cost saving of £9,793.25 (95% CI: £9,515.86 - £10,071.64) per individual. Trastuzumab treatment and administration accounted for £9,699.58 (95% CI: £9,436.20 - £9,954.67) of this cost saving, the remaining arising from cardiac assessment and treatment costs and inpatient days. The average QALYs for an individual in the 6m arm and 12 month arm were 1.146 (95% CI: 1.131 – 1.161) and 1.128 (95% CI: 1.113 – 1.144), respectively, giving an average QALY difference of 0.018 (95% CI: -0.003 – 0.039). Thus, the 6m arm dominated with a probability of being cost effective of 100%. 6m of Trastuzumab was shown to be cost effective compared to 12m with cost-savings and no evidence of a detriment to quality of life.

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