INAHTA Briefs

Issue 2009/053

Title **Taxanes for the Adjuvant Treatment Early Breast Cancer: Systematic Review and Economic Evaluation**

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Reference Volume 11.40. ISSN 1366-5278. www.hta.ac.uk/project/1516.asp

Aim

To estimate the clinical and cost effectiveness of docetaxel and paclitaxel compared with non-taxane, anthracycline-containing chemotherapy regimens for adjuvant treatment of women with early-stage breast cancer.

Conclusions and results

Eight of the 11 selected trials (6 docetaxel and 5 paclitaxel) reported a significant improvement in disease-free survival (DFS) or time to recurrence (TTR) for taxanes over comparator regimens. Docetaxel was associated with more adverse events than paclitaxel, most notably febrile neutropenia. Taxanes produced cardiotoxicity, although this was not reported to be greater than for anthracycline comparator arms in all trials. Treatment-related deaths were uncommon. Where reported, all chemotherapy regimens caused health-related quality of life (HRQoL) to deteriorate during treatment. Following treatment, no clinically significant differences were found between taxane and comparator treatment groups. Scant data compared licensed regimens of taxanes with chemotherapy regimens commonly used in the United Kingdom (UK). The three trials selected as the basis for economic analysis were those that used the taxanes in accordance with current UK marketing authorization and had also reported in full. The estimated incremental cost-effectiveness ratio (ICER) for docetaxel compared to FAC6, based on the BCIRG 001 study, is 12 000 pounds sterling (GBP) (7000-39 000 GBP) and for paclitaxel compared with AC, based on the NSABP B28 and CALGB 9344 studies, is 43 000 GBP (16 000 GBP – dominated) and 39 000 GBP (12 000 GBP – dominated) respectively. However, the comparators used in these trials restrict the generalizability of the results, as they do not conform to current standard care in the UK, typically FEC6 and E4-CMF4. An exploratory indirect comparison shows that the benefits of taxane-containing regimens compared to regimens in current use in the UK is subject to large uncertainty due to the lack of direct trial comparisons between these interventions. Assumptions regarding the benefits in the taxane arm after the trial follow-up period and the annual rate of recurrence in this period have the most significant influence on the ICER.

Recommendations

See Executive Summary link at www.hta.ac.uk/project/1516.asp.

Methods

See Executive Summary link at www.hta.ac.uk/project/1516.asp.

Further research/reviews required

More research is needed, comparing taxanes used in line with their current UK marketing authorization and with anthracycline-containing regimens commonly used in the UK. The ongoing TACT trial is expected to provide useful data. Scant data are available on the effectiveness of taxanes for the over-70s. Further research is required into the long-term outcomes of taxane therapy, eg, whether there are any long-term adverse events that significantly impact on overall survival or quality of life and whether the increases in DFS will translate into increases in overall survival.

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