# Bevacizumab for the treatment of recurrent advanced ovarian cancer

ADDITIONAL ANALYSES

BMJ Technology Assessment Group

# 1 UTILITY VALUES

During the pre-meeting briefing (PMB) it was noted that utility values used within the manufacturer's submission and model for the first line use of bevacizumab in ovarian cancer were assumed to increase over time in the progression free health state. Increasing utilities were not applied within the manufacturer's submission and model for use of bevacizumab in the recurrent setting for ovarian cancer. The ERG was therefore asked to investigate this difference and comment upon the relevance of increasing utilities in the recurrent setting.

On the 18th December the manufacturer's submission for the use of first line bevacizumab in ovarian cancer was published on the NICE website. The utility values that the manufacturer used were taken from a clinical trial of bevacizumab in the front line setting, ICON7. Data on EQ-5D were available from this trial, and were assessed over multiple time points. Therefore the manufacturer had information on quality of life at a sufficiently disaggregated level in which to comment on trends of utility over time. The manufacturer found that in the progression free health state, utility increased over time and offered the following explanation:

*"a trend test suggested that utility values did change over time, so this effect was included in the model. The literature, as well as clinical expert opinion, validates this assumption because it is not uncommon for patients' quality of life to improve over time following an initial diagnosis as they become more able to cope with the symptoms of the disease, the effects of chemotherapy and other treatments become more apparent to her and the fear of disease progression or recurrence lessens."* MS page 145.

The manufacturer did not apply an increasing utility in the progressed health state due to lack of data: *"the paucity of data from ICON7 available to estimate time-dependent utility for patients in the progressed disease health state has resulted in the calculation of a point estimate of utility which will apply for the entirety of the time spent in that health state."* MS page 146.

In OCEANS, the key clinical trial for bevacizumab in the recurrent setting, no quality of life data was collected. The manufacturer would therefore not have been able to confirm whether a similar effect was found in the recurrent setting, and would not have been able to model time dependent utilities without this information. Instead, utility data was taken from TA222 where point estimates of utility for the progression free and the progressed health state were applied in the model.

The ERG therefore considers that the use of time dependent utilities would not have been possible in the recurrent setting, and the applicability of time dependent utilities in the recurrent setting is not clear due to insufficient information.

# 2 ADDITIONAL ECONOMIC ANALYSES

During the PMB it was noted that within the manufacturer's economic analysis bevacizumab was included as a post-progression therapy; however, in UK clinical practice bevacizumab would be unlikely to be a post-progression therapy option. The ERG was therefore requested to provide a scenario analysis in which the cost of bevacizumab was excluded from post-progression therapy costs. This document contains details of the additional analyses performed by the ERG.

The ERG considered two scenarios and applied these to both the manufacturer's deterministic base case ICER (£149,050 per additional QALY) and the ERG's revised deterministic base case ICER (£148,360 per additional QALY):

- Scenario 1: removal of the cost of bevacizumab post-progression, leaving all other costs of post-progression within the model;
- Scenario 2: removal of the cost of bevacizumab post-progression, and application of the weighted cost of other post-progression therapies for those patients who would have received bevacizumab.

The results of these analyses are presented in Table 1 below.

Table 1. Additional post-progression cost analyses

| Scenario | Total cost | Incremental cost | Total QALYs | Incremental QALYs | ICER |
|---|---|---|---|---|---|
| **Applied to manufacturer's deterministic base case ICER (£149,050 per additional QALY)** | | | | | |
| Scenario 1 | | | | | |
| Bevacizumab group | £58,754 | | 2.28 | | |
| Placebo group | £13,185 | £45,569 | 1.98 | 0.30 | £152,879 |
| Scenario 2 | | | | | |
| Bevacizumab group | £58,807 | | 2.28 | | |
| Placebo group | £13,326 | £45,481 | 1.98 | 0.30 | £152,582 |
| **Applied to ERG's revised deterministic base case ICER (£148,360 per additional QALY)** | | | | | |
| Scenario 1 | | | | | |
| Bevacizumab group | £60,109 | | 2.27 | | |
| Placebo group | £15,027 | £45,082 | 1.98 | 0.30 | £151,843 |
| Scenario 2 | | | | | |
| Bevacizumab group | £60,155 | | 2.27 | | |
| Placebo group | £15,154 | £45,001 | 1.98 | 0.30 | £151,571 |
| Abbreviations used in table: ERG, Evidence Review Group; ICER, incremental cost-effectiveness ratio; QALY, quality adjusted life year. | | | | | |