LIVERPOOL REVIEWS AND IMPLEMENTATION GROUP (LRiG)

Additional information outlining the calculation of drug costs by the Evidence Review Group

This report was commissioned by the NIHR HTA Programme as project number 08/206/02

Completed 28th May 2012

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LIVERPOOL REVIEWS AND IMPLEMENTATION GROUP

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In their response to the appraisal consultation document (ACD), the manufacturer queried the Evidence Review Group's (ERG's) approach to calculating drug costs. This document provides the information required to reproduce the ERG's calculations.

1 RECALCULATION OF DRUG COSTS BY THE ERG

1.1 Cost of capecitabine

The cost of capecitabine was estimated assuming dosing of 1000 mg per m^2 of body surface area (BSA). Patients are assumed to conform to the female palliative breast cancer group reported by Sacco et al [1] with a mean BSA of 1.74 and standard deviation of 0.171. BSA is assumed to be normally distributed, and the proportions of patients falling into dosing bands (corresponding to all combinations of 150mg and 500mg vials) were estimated. These proportions allowed the mean number of vials of each size required per patient to be estimated (1.856 x 150 mg and 3.065 x 500 mg) and hence the expected cost per cycle of £224.57.

1.2 Cost of bevacizumab

The cost of bevacizumab was estimated assuming dosing of 15 mg per kg of body weight. Patients are assumed to conform to the female palliative breast cancer group reported by Sacco et al [1] with a mean body weight of 71.00kg and standard deviation of 15.36. Body weight is assumed to be log-normally distributed. In order to ensure consistency with the capecitabine cost calculations, the mean and standard deviation of body weight was estimated from the overall survey female population (68.15 kg / 14.74kg [2]) adjusted proportionately using the Dubois & Dubois BSA [3] formula so that

$$\text{Mean body weight (wt)} = 68.15 * (1.74 / 1.71)^{(1/0.425)} = 70.997$$

$$\text{and standard deviation (sd)} = 14.74 * (1.74 / 1.71)^{(1/0.425)} = 15.357$$

The proportions of patients falling into 100 mg dosing bands were estimated, based on the log-normal distribution using parameters (S, M) estimated by the method of moments, i.e.:

$$S = Ln(1 + sd^2/wt^2)^{0.5} = 0.214, \qquad M = Ln(wt) - 0.5 * S^2 = 4.240$$

These proportions allowed the mean number of vials of each size required per patient to be estimated (1.499 x 100 mg and 2.413 x 400) and hence the expected cost per cycle of £2593.70.

2 REFERENCES

1. Sacco JJ, MacBeth F, Bagust A, Clark P: The average body surface area of adult cancer patients in the UK: A multicentre retrospective study *PLoS ONE* 2010, 5(1):e8933.
2. LRiG data on file. In.
3. Du Bois D, Du Bois EF: A formula to estimate the approximate surface area if height and weight be known. 1916. *Nutrition* 1989, 5(5):303-312.