A systematic review of health state utilities in patients with advanced hepatocellular carcinoma

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Introduction

Hepatocellular carcinoma (HCC) is the fifth most common cancer in men, the eighth in women, and the third most frequent cause of cancer-related deaths worldwide.1 While HCC has increased in incidence in the United States and Europe, HCC is the leading cause of cancer-related mortality and morbidity in Asian countries. Assuring the quality and quality of life impact of HCC is important to inform health gains within future economic evaluations in HCC.

The objective of this review was:

- To examine published evidence describing preference-based utility weights for HCC

Methods

The systematic review was conducted as an update to the review of preference-based utility values performed as part of the long-term technology appraisal (STA) submission to NICE for sorafenib for advanced HCC (TA109).2

The same search strategy and eligibility criteria were used with one difference; studies that reported preference-based utility values for children aged <18 years only were included in this review, while they were included in the original review. A full protocol for the systematic review detailing the patient population and study designs to be included was developed prior to starting the update - a summary version is available upon request.

The review consisted of a comprehensive search strategy designed to ensure all relevant studies reporting preference-based utility weights from the published literature were retrieved. This strategy consisted of three approaches:

- A search of the literature indexed in the electronic database EMBASE.com from database start up until 6 October 2011
- A retrieval by bibliographic searching of primary references for preference-based utility values cited by authors of papers identified by the electronic database search
- Identification of preference-based utility values for HCC used in health technology assessment (HTA) submissions for interventions of the treatment for HCC

The eligibility criteria used in this review are shown in Table 1.

Table 1: Inclusion criteria used for this systematic review

<table>
<thead>
<tr>
<th>Inclusion criteria</th>
<th>Age group</th>
<th>Gender</th>
<th>Disease</th>
<th>Disease stage</th>
<th>Source of preference-based utility weight (how utility weight was derived)</th>
</tr>
</thead>
</table>
| Group 1 | <18 years | any | any | any | specific data needed or specific method applied | preference-based utility weights for children aged <18 years used in health technology assessment (HTA) submissions for interventions of the treatment for HCC
| Group 2 | ≤18 years | any | any | any | specific data needed or specific method applied | study included: all studies included in the original review
| Group 3 | ≤18 years | any | any | any | specific data needed or specific method applied | study included: all studies included in the original review
| Group 4 | ≤18 years | any | any | any | specific data needed or specific method applied | study included from bibliographic searching

Results

Fifty-eight published studies (with 13 primary studies reporting unique data) and two HTA submissions met the inclusion criteria.

The search with filters is detailed in Figure 1. Of the 58 data sources identified, only 25 studies (Group 1, 2, 3, 4) were excluded; however, 15 studies (Group 1 and 4) were of mixed interest to the review and are reported here2-9. To avoid the error of double-counting, studies in Group 4 were not extracted.

The final flow is presented in Figure 1. Of the 50 data sources identified, only 25 studies (Group 1, 2, 3, 4) were extracted. However, 15 studies (Group 1 and 4) were of mixed interest to the review and are reported here2-9. To avoid the error of double-counting, studies in Group 4 were not extracted.

Table 2: Included utility values (mean, utility weight and SD) for children aged <18 years (N values).

<table>
<thead>
<tr>
<th>Source</th>
<th>Year</th>
<th>Study population</th>
<th>Utility weight</th>
<th>SD</th>
<th>N</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lin 2011* (N=14)</td>
<td>2011</td>
<td>Renal cell carcinoma and breast cancer patients</td>
<td>EQ-5D VAS</td>
<td>0.31</td>
<td>14</td>
<td>HTA submission, TA189 (mapped values)</td>
</tr>
<tr>
<td>Lin 2011* (N=14)</td>
<td>2011</td>
<td>Renal cell carcinoma and breast cancer patients</td>
<td>SF-6D utility</td>
<td>0.31</td>
<td>14</td>
<td>HTA submission, TA189 (mapped values)</td>
</tr>
</tbody>
</table>

Conclusions

While this review has identified a number of studies that reported preference-based utility weights for HCC, the data identified from the majority of these sources are for a general, non-specific HCC health state. There is a lack of breadth in utility data specific to patients with advanced disease, and for pre-progression and post-progression stages of disease.

In light of this, the study will derive utility weights directly from patients with hepatic carcinoma, using the HCAT approach. The methods for deriving utility weights for a pharmacoeconomic model would most likely be to map HCAT data to a health state and quality of life index for HCC. The results of this review suggest that the instrument of eliciting weights and the validity of the analysis does not affect the method. Therefore, for future studies should use the outcomes of this review as a source of validation and comparison.

References