A Discrete Choice Experiment for Metastatic Breast Cancer Drugs: What Can Early Research and the Design Process Tell Us About Patient Preferences?

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Background

Designing a discrete choice experiment (DCE) patient questionnaire for medical treatments requires extensive research to develop an understanding of which attributes are most important to patients. To our knowledge, no such research has previously been completed for this purpose specifically in the context of drug treatments for metastatic breast cancer.

Methods

A DCE involves asking patients to choose between hypothetical alternatives, the same set of attributes are presented for all alternatives but the associated levels differ (e.g. mild or severe fatigue). Best practice guidelines recommend that the process of deciding which attributes to include, and how many, requires good quality qualitative research and literature reviews. The questionnaire should not contain too many attributes and all attributes should reflect information which is meaningful when choosing between drug treatments for metastatic breast cancer.

An initial shortlist of attributes was informed by completing four parallel work packages (WPs) (1) a systematic review of the qualitative literature regarding patient experiences with metastatic cancer (2) a systematic review of previous DCEs in the area of metastatic cancer (3) thematic analysis of Scottish Medicines Consortium (SMC) Patient and Clinical Engagement (PACE) statements (4) face-to-face interviews with patients living with metastatic breast cancer. The attributes on the shortlist were then incorporated into a pilot questionnaire which was taken to patients. Respondents were asked to choose their preferred treatment option and explain their reasoning in real-time. Think aloud piloting was used to finalise the questionnaire and the list of attributes.

Aims

We aim to understand which attributes of drug treatments are most important for metastatic breast cancer patients.

Discussion

Our research suggests that overall survival, risk of urgent hospital admission, tiredness, nausea, diarrhoea, peripheral neuropathy, mucositis, hot flushes are among the most important issues for patients undergoing drug treatments for metastatic breast cancer. The final results of the DCE will be able estimate the importance of the attributes relative to each other.

Results

Discrete Choice Experiment
- 6 attributes were chosen
- Adverse events were translated into patient language from grade 1 and 2 CTCAE descriptions
- A version for health professionals was created where the decision context is changed to providing a recommendation to a hypothetical patient

Fatigue
- Fatigue is among the most common toxicities associated with cancer
- Fatigue was mentioned by 8/9 interviewees
- Interviewees stressed that fatigue was unlike normal tiredness
- Fatigue is life-limiting
- Similar studies have used a fatigue attribute and the relative importance of the attribute has been mixed

Diarrhoea
- The results of the thematic analysis of PACE statements suggested that one of the core goals of treatment is to enable the closest approximation to normal living
- The results of the thematic analysis of the interviews demonstrated that diarrhoea is a considerable barrier to normal living
- The impact of diarrhoea has not been well explored in the qualitative literature

Urgent Hospital Admission
- There are many adverse events which could lead to urgent hospitalisation
- 4/ 9 interviewees reported being hospitalised with sepsis
- Hospitalisation represents a significant burden on public resources

Scenario

The care team wants to know your preference for your next cancer treatment. There are only two treatment options. You can choose to take treatment A, treatment B or you might wish to take no treatment at all. There are no other treatment options and there will be no new options in the future. Some side effects may be helped by medication but you will still experience the side effects for weeks at a time.

Which option would you choose?
- I would choose to take treatment A
- I would choose to take treatment B
- I would choose neither. I understand that I would have worse expected survival as a result.

Nausea and Vomiting
- Past qualitative research shows that nausea and vomiting has a detrimental impact on QoL
- Interviews confirmed that nausea and vomiting was a barrier to living a normal life

Additional Side Effects
- This attribute included 3 toxicities we couldn't include as individual attributes.
- Hand foot syndrome: One interviewee described the toxicity as highly distressing and a past DCE found it had a significant impact on patient's preference for treatment
- Mucositis: A very common toxicity which one interviewee had significant problems with
- Peripheral Neuropathy: A common side effect of chemotherapy with potential permanent effects

Overall Survival
- Survival was identified as a core goal of treatment across all WPs
- Not including overall survival as an attribute may bias results as respondents may attempt to deduce it using other available attributes
- Patient in piloting struggled to understand how hospitalisation and survival number were related. The decision was made to show them in a single graphic.
- Respondents are shown survival rates at 1 and 5 years both in terms of number of deaths and number alive