Patient Preferences Do Matter: A Discrete Choice Experiment (DCE) conducted with Breast Cancer patients in six European countries

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Background

Previous discrete choice experiment (DCE) in breast cancer (BC)[1,2] demonstrated that functional wellbeing (FWB) is deemed the most important attribute related to breast cancer treatments, followed by levels of pain and progression-free survival (PFS).

Objective

- To investigate to what extent the presence of attribute Overall survival (OS) affects the preferences of breast cancer patients for treatment characteristics.
- Describe preferences of breast cancer patients based on their EQ-5D status.

Methods

A DCE was conducted in France, Germany, Ireland, Poland, Spain and UK with Breast cancer (BC) patients, >18 years old, recruited via online panel. 6 attributes (Table 1) were used to create 16 choice sets, with unlabelled treatments, including Opting-out of treatment option. EQ-5D data were collected alongside disease-related and sociodemographic data. European value-set (EQ-5D VAS) was applied to produce utilities[3]. Interaction terms were constructed between utilities and attributes. Marginal rates of substitution (MRS) of out-of-pocket payment and other attributes were estimated. Preference data were analysed with conditional logistic model.

Table 1: Attributes and levels used in DCE

Attribute	Levels for treatments	Opt-out
OS in months	30, 35, 40, 45	20
Hyperglycaemia (risk of occurring)	0%, 5%, 20%, 35%	0%
Rash(risk of occurring)	0%, 4%, 12%, 20%	0%
Pain (levels of)	Severe, Moderate, No pain	Severe
Functional wellbeing	Severe, Moderate, No (impairment)	Severe
Out-of-pocket payment (OOP)*	€0, €3000, €5000, €8000	€0

**Purchasing Power Parity adjusted for each country*

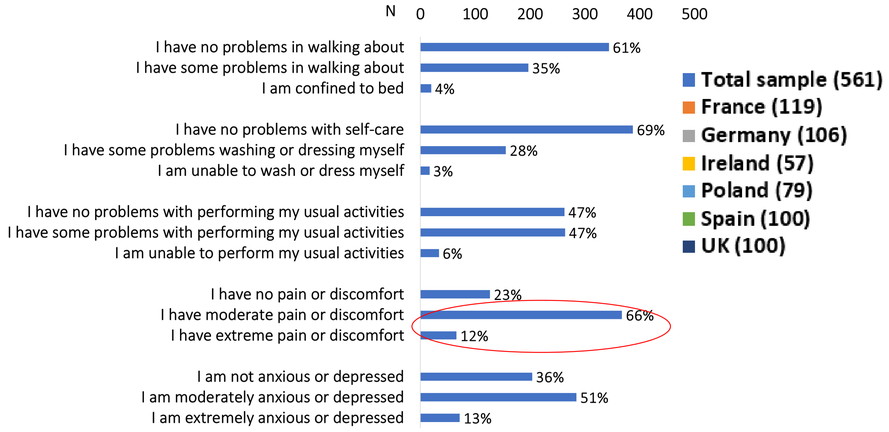
Results

Demographics: 561 BC patients completed the questionnaire. Figure 1 shows N per country. 28% were between 35-44 years old, 65% had completed university education, 56% were working at the time of the survey.

Disease-specific: 247(44%) respondents had advanced/metastatic breast cancer (AMBC) and 314 (56%) had early stage of cancer.

EQ-5D states: 61%, 69% and 47% of the sample reported no problems in the dimensions "Mobility", "Self-care" and "Usual activities" respectively. 66% and 51% of the respondents had moderate pain and anxiety, respectively. Pain is the EQ-5D domain with the largest proportion of patients in an impaired state. Mean utility score was 0.44 (SD=0.17). Utility scores would be higher if produced by country-specific tariffs which are usually TTO rather than VAS based, resulting in higher values[4].

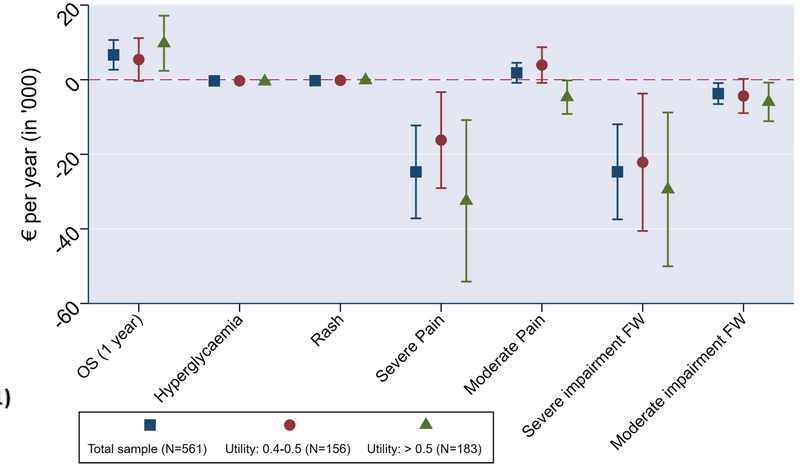
Figure 1: EQ-5D states



Preferences: The preferences for the total sample are presented in Figure 2, as MRS of OOP versus the rest of the attributes. "No pain" and "No impairment in FW" are reference levels for Pain and FW attributes. Negative values of OOP denote amount of OOP one is willing to pay to avoid impaired health states or adverse events (1% chance of occurring).

- Total sample: Based on the magnitude of MRS, "Severe pain" is the highest dis-preferred attribute level, followed by "Severe impairment in FWB" and OS. OS, Rash and Hyperglycaemia are strong predictors of choice. Moderate pain is not statistically significant (vs. "No pain").
- Patients with utility >0.5 (N=183): "Severe pain" is the highest dis-preferred attribute level, followed by "Severe impairment in FWB". Rash is not statistically significant attribute.
- Patients with utility 0.4-0.5(N=156): "Severe impairment in FWB" is the most dis-preferred attribute, followed by "Severe pain" and OS.

Figure 2: MRS (Out-of-pocket payment)



For patients with utility <0.4 (N=222), OOP was not a predictor of choice (statistically insignificant OOP coefficient). Hence, MRS were not calculated. Significant predictors of choice were OS, Rash, Severe Pain and Severe impairment in FW. MRS of OS vs. Pain and FWB, demonstrated that these patients would sacrifice 3.9 and 3.4 years of OS for 1 year in "No pain" and "Perfect FW" state respectively.

Conclusions

- "Severe levels of pain" and "Severe impairment of FWB" are the highest dis-preferred attributes.
- This study add to the findings of previous DCE[1,2] in that when patients are faced with choice of severe levels of pain and severe impairment in FWB vs. progression-free or OS, they are willing to trade off months of OS and PFS for perfect health state.
- The findings can assist clinical shared decision-making as well as regulatory/reimbursement policy makers in the choice of BC treatments.

References

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