

Patient preferences for the attributes of a noninvasive treatment for superficial basal cell carcinoma

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Research letter

Patient preferences for the attributes of a noninvasive treatment for superficial basal cell carcinoma: a discrete choice experiment

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DEAR EDITOR, To examine which attributes of a noninvasive treatment for superficial basal cell carcinoma are valued by patients, a discrete choice experiment (DCE) was performed alongside a clinical trial in which methyl aminolaevulinate photodynamic therapy (MAL-PDT), 5-fluorouracil and imiquimod were compared.¹

Treatment options were described by the following attributes: effectiveness, cosmetic result, treatment process and side-effects. Effectiveness was defined as the probability that complete tumour clearance is achieved 12 months after treatment with levels of 75%, 80%, 85% and 90%.^{2–4} The cosmetic result was explained as the chance of having a good or excellent cosmetic result at 12 months, defined as no scarring and/or a very light redness or other discoloration (levels 60% and 90%). This description was in line with the definition used within the clinical trial and the literature.^{1,3} Side-effects were defined as 'small wounds or ulcers that during treatment develop but disappear afterwards' (levels 60% and 90%).⁴ The treatment process was described as 'treatment is administered by an expert in the hospital twice within 2 weeks' or 'you apply the treatment yourself during 4–6 weeks daily at home'.

Based on the attributes and levels, a fractional factorial orthogonal design was obtained from a catalogue,⁵ creating eight hypothetical alternatives. Shifting was applied to create pairwise choice sets, thereby ensuring minimal overlap and level balance. An unlabelled design was chosen, which means that generic titles were used, such as treatment A and treatment B. In the questionnaire, nine choice sets were presented, of which two were identical. For each choice set, respondents were asked to choose treatment A or B. Data were collected by telephone interviews. A multinomial logit regression model was used to analyse the data (Nlogit version 5).⁶ Relative importance was calculated by multiplying the coefficient of each attribute in the model by the range used for attribute levels. Subsequently, the part-worth utility of each attribute was divided by the sum of the part-worth utilities of all attributes.

Of the 413 participants who had finished their first 3-month control visit, 332 patients (80%) agreed to participate. Two questionnaires were excluded because participants did not complete the eight choices. Of 81 nonresponders, 43 respondents could not be contacted due to removal of data or

wrong telephone number, while 38 refused to participate for different reasons. The mean age was 61.6 ± 11.3 years and 51% were male.

Table 1 (model 1) shows that patients significantly prefer a treatment by an expert twice during 2 weeks at the hospital, a higher chance of effectiveness, a higher chance of a good-to-excellent cosmetic result and a lower chance of local side-effects. The relative-importance results (model 1) show that effectiveness is the most important attribute, contributing 47% to the treatment choice, followed by cosmetic result (26%), local side-effects (16%) and finally, treatment process (12%).

The significant interaction between 'treatment received within the trial' and 'treatment process' (model 2) shows that the preference for the process attribute depends on the therapy patients received within the trial.

To the best of our knowledge, this is the first choice experiment that focused on patient preferences for attributes of non-invasive therapies. The inclusion of surgery as a treatment option would perhaps have reflected a truer clinical situation. However, as our DCE was performed alongside a clinical trial in which noninvasive treatments were compared, we were primarily interested in those preferences.

Table 1 Results of the multinomial logit model

Attributes	Mean	SE	Relative importance
Model 1			
Effectiveness	0.065	0.005***	0.47 (1)
Cosmetic result	0.018	0.001***	0.25 (2)
Side-effects	-0.011	0.001***	0.16 (3)
Treatment process	-0.25	0.042***	0.12 (4)
No. of observations = 2640			
No. of individuals = 330			
Log likelihood = -1620			
Model 2			
Effectiveness	0.071	0.005***	
Cosmetic result	0.019	0.001***	
Side-effects	-0.011	0.001***	
Treatment process	-0.1026	0.089***	
Treatment process × treatment received within trial	1.41	0.10***	
No. of observations = 2640			
No. of individuals = 330			
Log likelihood = -1516			

Likelihood ratio χ^2 : model 2 vs. model 1: $\chi^2 (207.8) \geq \chi^2 (3.841)$; $P = 0.05$. *** $P < 0.01$.

The results showed that the preference for a treatment process was influenced by previous experience. It means that patients who received MAL-PDT preferred to be treated at the hospital by an expert during 2 weeks, while patients who applied a cream preferred treatment at home. This phenomenon might indicate status quo bias, which leads people to value goods or services more once they own or experience them. We felt it was important to include patients with treatment experience as this might provide newly diagnosed patients with information about the acceptability of a therapy. Nevertheless, it is possible that patients without previous experience value treatment attributes differently.

In contrast with the study by Tinelli *et al.*,⁷ we did not include costs as an attribute. Treatment for sBCC is free at the point of care in the Netherlands, which is why a cost attribute would add nothing to the realism of the choice sets. A limitation might be that we combined different aspects of a treatment process in one level. This makes it impossible to distinguish which aspects of a treatment process, such as location or duration, are preferred. Still, separate combinations (i.e. 'at home by an expert during 2 weeks' or '4–6 weeks daily by yourself at the hospital') are nonexistent. Previous clinical results showed superiority of imiquimod and noninferiority of 5-fluorouracil compared with MAL-PDT in terms of effectiveness.^{1,8}

The results of this DCE show that effectiveness was the most important driver for a treatment preference. Hence, imiquimod should be considered the first-line therapy when choosing between noninvasive treatments for superficial basal cell carcinoma.

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