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Full length article

Women's preferences for the levonorgestrel intrauterine system versus endometrial ablation for heavy menstrual bleeding

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ABSTRACT

Objectives: Women's preferences for treatment of heavy menstrual bleeding (HMB) are important in clinical decision-making. Our aim was to investigate whether women with HMB have a preference for treatment characteristics of the levonorgestrel intrauterine system (LNG-IUS) or endometrial ablation and to assess the relative importance of these characteristics.

Study Design: A discrete choice experiment was performed in general practices and gynaecology outpatient clinics in the Netherlands. Women with HMB were asked to choose between hypothetical profiles containing characteristics of LNG-IUS or endometrial ablation. Characteristics included procedure performed by gynaecologist or general practitioner; reversibility of the procedure; probability of dysmenorrhea; probability of irregular bleeding; additional use of contraception; need to repeat the procedure after five years; and treatment containing hormones. Data were analysed using panel mixed logit models. The main outcome measures were the relative importance of the characteristics and willingness to make trade-offs.

Results: 165 women completed the questionnaire; 36 (22%) patients were recruited from general practices and 129 (78%) patients were recruited from gynaecology outpatient clinics. The characteristic found most important was whether a treatment contains hormones. Women preferred a treatment without hormones, a treatment with the least side effects, and no need for a repeat procedure or additional contraception. Women completing the questionnaire at the gynaecology outpatient clinic differed from women in primary care in their preference for a definitive treatment to be performed by a gynaecologist.

Conclusions: Whether or not a treatment contains hormones was the most important characteristic influencing patient treatment choice for HMB. Participants preferred characteristics that were mostly related to endometrial ablation, but were willing to trade-off between characteristics.

Introduction

Heavy menstrual bleeding (HMB) is an important health issue among women of reproductive age. Every year one in 20 women consults their general practitioner (GP) about HMB. HMB is one of the most common reasons to consult a gynaecologist [1–3]. Both the Dutch College of General Practitioners' practice guideline on vaginal bleeding and the Dutch and international gynaecological guidelines on menorrhagia recommend the use of the LNG-IUS as one of the first therapeutic options for HMB [4–6]. Endometrial ablation is another frequently used, minimally invasive treatment option for HMB. Both treatments are effective in decreasing blood loss, but there is insufficient evidence to suggest a significant difference in blood loss reduction between the two treatment

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options [1,7–10]. Consequently, current treatment choice is based on patient preferences. The LNG-IUS can be placed by the GP, but has considerable discontinuation rates due to side effects such as irregular bleeding (spotting) [1,7]. The contraceptive effect of the LNG-IUS can be beneficial but only lasts five years, after which the LNG-IUS has to be replaced. On the other hand, endometrial ablation is an irreversible treatment option, performed by a gynaecologist. It does not provide any contraception and has higher rates of dysmenorrhea [11]. In order to make a well-informed decision, women need to be aware of the characteristics of the above-mentioned treatments. Moreover, Kennedy et al. showed that providing women with information alone did not affect treatment choices, but clarifying values and eliciting preferences did have a significant effect on women's treatment choice [12]. Understanding patients' considerations in decision making can contribute to improvement in treatment counselling and shared decision making, and can lead to higher patient satisfaction rates. Few studies on patient preferences regarding treatment with the LNG-IUS or endometrial ablation have been performed [13–15]. It is unknown which treatment is preferred and which characteristics of these treatments are important in patient treatment choice. In this discrete choice experiment (DCE), we investigated whether women with HMB have a preference for the treatment characteristics of the LNG-IUS or of endometrial ablation and assessed the importance they place on these characteristics.

Materials and methods

Setting and participants

Women with HMB, without an indication for an organic cause and where treatment with oral medication failed or was not preferred, were informed about the study. Women were recruited in general practices in different regions of the Netherlands and in two gynaecology outpatient departments (Maxima Medical Centre, Veldhoven and Jeroen Bosch Hospital, Den Bosch). Women who agreed to participate were asked to complete a questionnaire before a treatment option was chosen. Participation was voluntary.

DCE: attributes and levels

A DCE is a survey-based technique used to quantify patients' preferences. It is based on the premise that every treatment can be described by its characteristics (attributes), and that women can value these attributes upon their levels. The relative importance of the attributes and the trade-offs that respondents make between them can be assessed by offering a series of choice sets with varying levels of the attributes [16]. The selection of attributes and levels was based on literature and expert opinion [1,7,11,13,17–26]. We interviewed patients with HMB (n = 12) and experienced gynaecologists from different hospitals about the attributes they considered important. We discussed the identified attributes and corresponding levels in an experienced and specialised DCE group at the gynaecology department of the Academic Medical Centre, Amsterdam (AMC). Finally, we asked 20 patients with HMB to rank our list of attributes in order of importance and to indicate whether important attributes were missing. (see Appendix A. Supplementary data table S1) We selected the following attributes for the DCE (see Table 1): procedure performed by gynaecologist or GP [1]; reversibility of the procedure [2]; probability of dysmenorrhea (1% vs. 10%) [3]; probability of irregular bleeding (0% vs. 15%) [4]; need to use additional contraception [5]; need to repeat the procedure after five years [6]; and treatment containes hormones [7].

Table 1
Attributes with their corresponding levels.

Attribute	Level
Procedure is performed by	General Practitioner
	Gynaecologist
Procedure is reversible	Yes
	No
Probability of dysmenorrhea	1%
	10%
Probability of irregular bleeding	0%
	15%
Need to use additional contraception	Yes
	No
Need to repeat the procedure after 5 years	Yes
	No
The treatment contains hormones	Yes
	No

Development of the choice sets

The combinations of seven attributes, each with two levels (Table 1) were converted into 16 choice sets. Many scenarios can be developed when using seven attributes with two levels each. It is not feasible to put all these options into one questionnaire, so a functional sample of scenarios was generated using an orthogonal design. This creates an optimal balance of the attributes and attribute levels with minimal correlation [27]. This resulted in 32 scenarios, which were randomly combined into 16 discrete choice sets using Ngene design software (version 1.1.1. Choicemetrics Pty Ltd, Sydney, NSW, Australia) to create the most efficient design. In a series of 16 choice sets, women were asked in an unlabelled design to choose between hypothetical scenarios of a 'treatment A' and 'treatment B'. (Fig. 1) Women did not know which attribute level belonged to which treatment. Women had to choose their most preferred option in each choice set, using a forced choice design. The choice sets did not have an 'opt out' alternative (for example a 'no treatment' option). One dominant choice set was added with the levels of each attribute (where possible) completely in favour of one treatment. Women who failed this rationality test were excluded from the analysis.

Questionnaire

The questionnaire consisted of general questions regarding patient characteristics, followed by contextual information about the topic, attributes, questionnaire instructions, and the 16 choice sets. The questionnaire was tested prior to the study by a panel of doctors, nurses and women with HMB to assess interpretation.

Ethical considerations

The methodology of this study does not fall within the scope of the Medical Research Involving Human Subjects Act as participants are not subjected to a treatment or to behavioural adjustment. A declaration of no objection was received from the institutional review board of the AMC, Amsterdam.

Statistical analysis

Recommendations in literature vary about the appropriate sample-size for DCEs [28]. Most DCEs have a sample size between 100 and 300. We aimed to include at least 20 patients per attribute. Our aimed sample size of 140 women in total meets Johnson's rule-of-thumb [29,30]. Data were processed and transferred to STATA SE 11 (StataCorp LP, College Station, TX, USA). For demographic