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Kumps C[1], Decalf V[1], Benoit D[2], Huion A[3], Denys M[1], De Witte N[3], Everaert K[1]
***1.** Ghent University Hospital, **2.** Ghent University, **3.** University College Ghent*

IMPACT OF SIDE EFFECTS ON CHOICE OF ANTI-CHOLINERGIC MEDICATIONS FOR OVERACTIVE BLADDER IN AN OLDER POPULATION: A DISCRETE CHOICE EXPERIMENT

Hypothesis / aims of study

Overactive bladder (OAB) is defined as urgency, with or without urge incontinence, usually with frequency and nocturia, without proven infection or other obvious pathology. The prevalence of OAB with bothersome symptoms is 11% in women and 5% in men (>40 years old) and the incidence increases with age (1). This condition has a serious impact on the individuals' physical capacities and well-being as well as on society. Daily oral anticholinergic drug intake is the first-line treatment of OAB. Several compounds with a similar effectiveness on OAB symptoms are currently used and available on the market however they can display a distinct spectrum of adverse effects. Commonly described side-effects are dry mouth (30%), constipation (8%), blurred vision (4%) and some other less frequently reported effects (2). As these medications pass the blood brain barrier, also cognitive effects can take place such as confusion, concentration problems, troubles in finding words, decreased functioning of the long or short term memory (3). Up until now, although OAB occurs more frequently with increasing age, no data exist that highlight which adverse effects are considered important by older people. The aim of this study was to determine which of a selected number of side effects would attribute most to the choice of oral anti-cholinergic medications for OAB in older people.

Study design, materials and methods

A discrete choice experiment (DCE) was developed and performed using the input of 131 older people (>65 years) living at home, recruited by a convenience sample. In this DCE, individuals were described a fictitious health condition (with the complaints pattern of OAB). They were explained that effective medications exist for this condition, however each with a particular profile of side effects. Next they were offered a series of choice tasks, where they had to choose between 9 combinations of two alternatives, representative for fictitious medications for OAB. This study made use of 4 attributes and for each attribute two different levels were selected (moderate; m or severe; s): dry mouth (m/s), constipation (m/s), blurred vision (m/s) and cognitive effects (m/s). The DCE survey data were analysed using a conditional logit model.
The individuals were subjected to the EQ-5D and ICIQ-OAB questionnaire to determine overall health related quality of life and complaints of OAB in the studied population.

Results

Participant characteristics and OAB symptoms

In this study 131 older people, amongst who 40 men and 91 women, with a median age of 75 [IQR: 70-80] participated. Thirthy-two percent of people had mobility issues, 18% had self-care issues, 29% had limitations in the usual activities, 61% suffered from any pain or discomfort and 13% presented with anxiety or depression. Nine percent of volunteers appeared to have a daytime frequency of ≥9. Urgency was reported by 11% and urge incontinence by 3%.

Discrete choice experiment

From the DCE analysis it was derived that patients ranked the side effects as having the most negative influence on medication choice as follows (see table 1): severe cognition effects (1), severe blurred vision (2), severe constipation (3), severe dry mouth (4), moderate cognition effects (5) and moderate constipation (6). Two parameters appeared not significant: moderate dry mouth and moderate blurred vision.

Side effect			Coefficient	Standard error	p-value
Dry mouth					
	Moderate		-0.3372	0.2251	0.123
	Severe	4	-2.0001	0.5573	<0.001
Constipation					
	Moderate	6	-0.5092	0.1530	<0.001
	Severe	2	-3.4696	0.6848	<0.001
Blurred vision					
	Moderate		0.1736	0.2445	0.478
	Severe	3	-2.5768	0.3792	<0.001
Cognitive effects					
	Moderate	5	-1.7018	0.3411	<0.001
	Severe	1	-4.9738	0.6439	<0.001

Interpretation of results

This study investigated 131 volunteers in an older population (>65 years old) living at home. As expected from an older population, an important percentage of these people presents with a decrease to some extent in health related quality of life. However, in the investigated population, only a limited number of people presents with typical OAB symptoms. The DCE analysis results in a ranking of side effects that are negatively decisive in the choice of medication by older people, given the hypothetical health condition with OAB complaints. The highest ranked side effects are severe cognition effects, severe blurred vision, severe constipation and severe dry mouth, all severe level attributes, where it should be noted that the severe cognitive effects have a stronger negative impact (coefficient -4.97) on medication choice than the other attributes. Only two out of four attributes (cognition and constipation) with a moderate level of complaints exert a significant negative effect on medication choice, where it should be noted that the moderate cognitive effects (coefficient –1.70) are found clearly more negative than moderate constipation. Two parameters, moderate dry mouth and moderate blurred vision, were not found to attribute significantly, meaning that the presence of these adverse effects were not considered significantly relevant in chosing medication for OAB.

Concluding message

This study shows that for individuals in a normal older population each of the described severe (cognitive effects, blurred vision, constipation and dry mouth) as well as two moderate (cognitive effects and constipation) side effects exerts a significant negative effect on medication choice for OAB treatment. Moreover, for the first time we show that cognitive effects (both at the severe and moderate level) appear to have the largest impact on medication preference for OAB in the older population. This might indicate that older people particularly value impact on their cognitive skills more than on somatic functionality. Hence, this should be taken into account by physicians when prescribing medications or by pharmaceutical companies when developing new drugs.

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Disclosures

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