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COGNITIVE FUNCTION IN ELDERLY PATIENTS WITH OVERACTIVE BLADDER: DOES TRANSDERMAL OXIBUTININ HAVE ANY EFFECT?

Hypothesis / aims of study
Transdermal Oxybutynin (TDOx) is indicated in Overactive Bladder (OAB) and has shown to be more tolerable due to a lower concentration of its active metabolite (N-Desoxi-Oxibutinyn) involved in the onset of side effects.
Cognitive impairment in some anticholinergic drugs is related to passage through the blood/ brain barrier and antagonism of M1 receptors in the central nervous system being. Elderly population has a higher risk and thus implies greater concern (1).

Objective: To determine if there is a measurable cognitive function deterioration in elderly patients treated with TdOx. Secondary objectives: assessment of treatment efficacy and adherence.

Study design, materials and methods
Observational, retrospective, multicenter study.
Patients diagnosed with overactive bladder who met the criteria for inclusion / exclusion were uniformly assessed at office visit and treatment through a unified registry involving several urologists. Patients were included when TDOx (3,9mg/24h) was prescribed according to routine clinical practice. Inclusion criteria was a clinically significant OAB defined as at least one episode of Urgency and age between 65 and 80 yo. Excusion criteria were morbid obesity (BMI>40), severe renal or hepatic failure, active treatment for neurologic diseases, or a score < 23 in the Mini Mental State Examination.

Assesment was done at initial visit and at the follow up visit 4 weeks later. Tools used where a) specific OAB questionnaires: Bladder Self-Assestment questionnaire (BSAQ) and Patient Perception Bladder Control (PPBC), b) Adherence questionnaire: Morisky-Green Test and, c) Cognitive function tests: Memory Alteration Test (M@T) (2) and Clock-Drawing test (3).

Statistical analysis: Results were treated with relative frequency measurement. For continuous variables, central tendency measures were used for comparisons Student t test, Wilcoxon and Chi-square test was used. The level of statistical significance was set at <0.05

Results
A total of 85 patients were recruited, of whom 70 patients were fully evaluable with an average age of 71.37 years, recruited in 12 centers. 71.4% were women, 51.4% had basic education and 70% came from a urban environment. Average BMI was of 28.68. Cognitive function test (T@M) showed no significant differences in any of the areas of assessment before and 4 weeks after treatment, both for overall and detailed sub-scores (Table 1). Similarly, no differences were observed in the Clock-Drawing Test (Table 2). Adherence to treatment was 84% with improvement in symptoms and the PPBC and BSAQ questionnaires.

Interpretation of results
In this short- term study, elderly population with overactive bladder syndrome treated with TDOx showed no impairment in cognitive function assessed by 2 different tests. These findings suggest that this medication can be safely used in this group of patients regarding to their cognitive function. Overall, 62 patients initially had initial normal cognitive function, which remained unchanged after treatment.

Concluding message
No impairmen in cognitive function has been observed in elderly patients with overactive bladder treated with transdermal oxybutynin for one month. Longer follow up studies in larger populations are needed to confirm these results.

TABLE 1. Memory alteration test changes throughout treatment

Memory alteration test	Basal	1 m post TdOx.	P_value
	M (SD)	M (SD)	
Immediate memory (0-10)	9,01 (1,28)	9,20 (1,15)	0,145
Temporal orientation memory (0-5)	4,89 (0,36)	4,84 (0,47)	0,475
Remote semantic memory (0-15)	13,33 (1,84)	13,33 (2,20)	0,942
Free evocation memory (0-10)	7,19 (2,06)	7,67 (1,98)	0,035
Evocation memory with clues (0-10)	8,54 (1,56)	8,89 (1,48)	0,029
Total memory score(0-50)	42,96 (5,55)	43,93 (5,72)	0,034
Cognitive function	**Basal**	**1 month**	
Impaired	8	6	
Normal	62	64	

TABLE 2. Clock-Drawing test chages throughout treatment

	Basal	1 m post TdOx	P_value
	M (SD)	M (SD)	
Clock waiting time (0-2)	1,91 (0,28)	1,87 (038)	0,317
Number assesment and sequence (0-4)	0,32 (0,66)	0,41 (0,87)	0,475
Cock hands presence and localization (0-4)	0,75 (1,20)	0,63 (1,04)	0,569
TOTAL CLOCK TEST SCORE (0-10)	9,09 (1,51)	8,87 (1,97)	0,279

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