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Review

Overactive bladder syndrome: considerations in pharmacotherapy and new perspectives

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Abstract

The great epidemiological relevance of the overactive bladder (OAB) syndrome and its impact on quality of life of sufferers has encouraged a growing amount of research both in basic science and in clinical fields, with the pharmacological treatment of OAB syndrome being particularly investigated. Recently a new perspective for the use of α-lytic drugs in the treatment of OAB syndrome has been disclosed due to encouraging anecdotal data, and to the identification of different adrenoceptor subtypes in the female lower urinary tract. Starting with a reference picture of female lower urinary tract disorders, the authors review the present pharmacological treatment of female lower urinary tract disorders, and delineate the new perspectives acquired from recent studies of adrenoceptor subtypes.

Keywords: Overactive bladder syndrome; Pharmacotherapy; Adrenoceptors

Contents

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1. Introduction

Male and female lower urinary tract symptoms have similar characteristics even if they can have extremely different causes. According to the new ICS definition [1], lower urinary tract symptoms can be devided into the following three groups:

- Storage symptoms, which include: increased daytime frequency, nocturia, urgency and urinary incontinence.
- Voiding symptoms, which include: slow stream, splitting or spraying, intermittent stream, hesitancy, straining, terminal dribble.
- Post micturition symptoms, which include: feeling of incomplete emptying and post micturition dribble.

Urinary incontinence, which is now defined by the International Continence Society as "...any involuntary leakage of urine"[1], is a more frequent condition in women than in men (Table 1), with a prevalence increasing with age.

Urgency (defined as the complaint of a sudden compelling desire to pass urine, which is difficult to defer), with or without urge incontinence, usually with frequency and nocturia, can be described as the overactive bladder syndrome [1]. In a recent study the SIFO Group [8] pointed out that the vast majority of people with overactive bladder (OAB) syndrome report frequency and urgency, while only a third report urge incontinence. According to their data, the global prevalence of overactive bladder in the general population aged 40 or more varies between 12 and 22%.

2. Pharmacotherapy

Pharmacotherapy is a treatment of choice for patients complaining of overactive bladder syndrome. Different drugs with different characteristics of action are generally used.

Table 1
Prevalence of urinary incontinence according to gender

Study	Prevalence (%)	
	F	M
Yarnell and St. Leger [2]		
Years 65+	37	11
Thomas et al. [3]		
25–64 years	27	5
Years 65+	31	16
Vetter et al. [4]		
Years 65+	18	7
Michigan generations follow-up [5] (Herzog and Fulz)		
23–62 years	12	2
Years 65+	23	11
Market Opinion Research International (MORI) [6]		
Bortolotti et al. [7]	14	7
>40 years	11	3

2.1. Anticholinergic agents

In the treatment of the OAB syndrome, the following antimuscarinic athropin-like drugs are the most commonly used.

2.1.1. Oxybutynin

Oxybutynin has a direct spasmolytic effect along with anticholinergic properties. The dosage must often be adapted to the individual patient in relation to her tolerance. Its systemic antimuscarinic action, with effects on the gastroenteric tract and on the lachrymal glands, is the major cause for the therapy having been abandoned [9,10]. Oxybutynin is usually prescribed at the dosage of 5 mg twice a day with the possibility to increase up to 10 mg three times a day [11]. The use of slow release systems of oxybutynin could improve patient compliance when compared to the immediate release formulation [12], although some data are controversial [13].

2.1.2. Trospium chloride

Trospium chloride is an antimuscarinic drug with a variable absorption. It lacks selectivity for the bladder and the clinical evidence for its efficacy and tolerance in treating OAB syndrome is still poor. In fact, in a recent metanalysis [14], only two randomised, double-blind studies have been included showing that Trospium chloride significantly increases maximum bladder capacity compared to placebo but has a higher incidence of dry mouth (trospium, 14%; placebo, 8.4%).

2.1.3. Tolterodine

Tolterodine is the newest antimuscarinic on the market at present with an efficacy of 50% in the treatment of OAB syndrome. It is characterised by a greater selectivity for the lower urinary tract compared to oxybutynin; this determines a significant decrease in side effects allowing a better treatment compliance in the long term, even when slow release formulations are compared, maintaining an effective treatment aound 50%. This allows improved compliance for long term pharmacologic therapy [12,13–23].

2.2. Drugs to decrease contractility

2.2.1. Imipramine

Imipramine is a tricyclic antidepressant which inhibits the re-uptake of noradrenaline and 5-idrossitriptamine in the presynaptic membranes, increasing their action in this way. It has a relaxing effect on the bladder and increases urethral resistance to flow. It also has anticholinergic and local anaesthetic properties. Imipramine is used in the treatment of nocturnal enuresis and nocturia but it is limited by its anticholinergic and cardiac side effects [24].