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Case Report

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Urinary retention in male patient associated with aripiprazole

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Abstract
Urinary retention and / or voiding difficulty are a rare side effect caused by the second generation antipsychotics. Aripiprazole has a lower incidence of adverse effects than other second generation antipsychotics (SGA) and aripiprazole can be used as an alternative treatment on patients who have urinary retention depending on antipsychotic use. Although there are limited data in literature about the effect of aripiprazole on urinary retention, a case was encountered urinary retention with the use of antidepressants and aripiprazole together. Also there is only one case in the literature about urinary retention occurred with aripiprazole. Our case emerged urinary retention with the addition of aripiprazole while under treatment of paroxetine. Patient's complaints have stopped with the discontinuation of aripiprazole and never emerged under treatment of paroxetine and risperidone. We aimed to contribute this case because there is limited data in literature about this subject. As a result, adrenergic, cholinergic, serotonergic, dopaminergic and histaminergic pathways have role on control of micturition but it is not clear that on which pathway aripiprazole acts on urination. However there is no symptom of urinary retention after stopping aripiprazole and adding risperidone, shows that there is a different mechanism associated with voiding in this case. Additional studies need to be done to clarify the mechanism.

Key words: Urinary retention, aripiprazole, side effect

Introduction

It is known that urinary retention may develop during the use of low-potency first generation antipsychotics; but it is rare with the use of SGA [1]. Only a 48 year old female patient revealed urinary retention after dosage of quetiapine [2]. Aripiprazole has partial agonist effect on D2 and 5-HT1A receptors and has antagonist effect on 5-HT2A receptors [3]. Aripiprazole has moderate affinity for histamine, α1-adrenergic, muscarinic and D4 receptors while has no acceptable affinity for cholinergic muscarinic receptors [4].

Compare with other SGA's, aripiprazole has a lower incidence of side effects. The relation between aripiprazole and voiding has not been fully resolved. Aripiprazole is thought to be an alternative drug in patients who has urinary retention due to other antipsychotics [5]. In a study of 300 patients who use aripiprazole, only 13 patients have been reported to be with dysuria [3]. In addition, two case reports issued that 3 patients with urinary retention. One of these developed urinary retention after addition of 20 mg/day aripiprazole to sertraline 25 mg/day; other patient developed urinary retention after addition of 7,5 mg/day aripiprazole to 20 mg/day escitalopram [6,7].

We report a case of urinary retention after the addition of aripiprazole to paroxetine treatment.

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Case Report

M.A., 23 year old male patient, applied to the psychiatric clinic with depressive symptoms such as malaise, diminished pleasure, lack of energy, sleep and appetite changes about last one month. Patient was using paroxetine 10 mg/day about one year with the same complaints, however his symptoms were relapse last month. 3 years ago he had a depressive episode and, his complaints improved markedly with paroxetine 20 mg/day, however after a period he had a hypomanic episode. Because of the episode paroxetine has been stopped and risperidone 1 mg/day and valproic acid 500 mg/day was started. For a while he had stopped using drugs because of trouble concentrating side effect. He had not any complaints until one year ago.

Last one month, depressive symptoms increased, therefore 5 mg/day aripiprazole added to paroxetine 10 mg/day treatment. The paroxetine did not increased according to the history of drug (paroxetine 20 mg/day) related hypomania. In his outpatient controls he had a complaint of decrease in urine volume and urinary frequency one day after aripiprazole treatment and developed urinary retention second day of aripiprazole treatment. He didn't have burning or pain during urination. He didn't use drug except paroxetine and aripiprazole. There was not any etiological cause for acute urinary retention according to physical examination, ultrasound graphical and biochemical findings in urology consultation. Aripiprazole treatment was quited because of patient's complaints started immediately after initiation of aripiprazole. Paroxetine was continued at the same dose and risperidone was added at a dose of 1 mg/day. After the quit of drug,

patient's symptoms gradually decreased and disappeared completely within 1 week. Patient was permitted to use the information and signed patient consent form.

Discussion

There are many reasons of acute urinary retention like obstructive, infectious, inflammatory, pharmacological and neurological [8]. However these reasons are excludes in our case. Patient didn't have any urinary problem while using paroxetine treatment about 1 year. Urination difficulties begin just after addition of aripiprazole treatment and complaints decline after the discontinuation of the drug. This situation suggests that the cause of urinary retention was aripiprazole. In addition, there wasn't predisposing factors such as age and history of urological disease. According to the Naranjo criteria which is developed to assess adverse drug reactions, urinary retention of our case can be considered as a "probable" negative side effect of aripiprazole [9].

Several neurotransmitters including dopamine, serotonin, noradrenaline, GABA, excitatory and inhibitory amino acids, opioids, acetylcholine and neuropeptides are involved in the control of micturition [10]. α-1 adrenergic receptors increase the contraction of bladder neck, urethra and prostate for enhance the bladder outflow resistance [11]. 5 HT receptors have critical function in voiding [12]. Descending serotonin pathways from the raphe nuclei inhibit bladder contractions and this may explain the effect of serotonergic-based antidepressants in the treatment of urge incontinence [13,14]. Dopamine receptors also have very important effect on the micturition. Several studies revealed that activation of D1 and D5 receptors represses micturition while D2, D3, D4 activates micturition [15]. Therefore, D1 receptors are regarded to tonically inhibit the voiding reflex while D2 receptors contribute to the voiding reflex [16]. Furthermore, agonists of D1 receptors suppress an overactive bladder and agonists of D2 receptors stimulate bladder over activity [17]. Urinary retention in the patient may have been the result of central serotoninergic mechanism, in or without combination with central D2 blockage [10].

According to this knowledge, aripiprazole can be considered to have facilitated effect on voiding via partial agonism on D2 and 5-HT1A receptors. In this case, there must be another predisposing factor or mechanism of aripiprazole to cause urinary retention. Although there are limited data in literature about the effect of aripiprazole on urinary retention, a case was encountered urinary retention with the use of antidepressants and aripiprazole together [6]. Serotonin and noradrenalin are responsible for the function of the lower urinary tract. Both serotonin and noradrenalin facilitate the excitatory effect of glutamate on pudendal nerve, which causes the rhabdosphincter contraction [18]. Our case emerged urinary retention with the addition of aripiprazole while under treatment with paroxetine. In this case, cause of urinary retention can be considered to be the result of synergy of an aripiprazole and antidepressant combination. Both aripiprazole and paroxetine inhibited CYP2D6, thus they can increase the effects and side effects of each other [19]. A common side effect of each drug may arise when the two drugs are used together; even though it may not seen with both drugs are used individually. Although antidepressants known to make worsen urological problems, there is only one case in the literature about urinary retention occurred with aripiprazole [8].

As a result, adrenergic, cholinergic, serotonergic, dopaminergic and histaminergic pathways have role on control of micturition but it is not clear that on which pathway aripiprazole acts on urination. However there is no symptom of urinary retention after stopping aripiprazole and adding risperidone, shows that there is a different mechanism associated with voiding in this case. Additional studies need to be done to clarify the mechanism.

Disclosure

The authors of this manuscript have no conflicts of interest.

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