# Case series suggesting an association between Sertraline and urinary side effects In A Sheffield Child and Adolescent Mental Health Services (CAMHS) population

#### Sidra Chaudhry & Nisha Alex

# Abstract

Sertraline is a psychotropic medication commonly used for its efficacy in treating depression, anxiety, post-traumatic stress disorder and obsessive compulsive disorder. Along with its therapeutic effects, Sertraline is known to commonly cause gastrointestinal and sexual side effects. However, urinary side effects are not commonly discussed when initiating patients on Sertraline. In this case series, we briefly report three cases of young people aged 16 years and below in a Sheffield Child and Adolescent Mental Health Services (CAMHS) population who began experiencing urinary side effects after treatment with Sertraline for depression and anxiety. We considered potential links between dose and duration of Sertraline use with the onset of urinary side effects. We hope this study would add to the commonly known side effect profile of Sertraline and increase awareness of the impairment in quality of life to those experiencing these urinary side effects.

Keywords: Sertraline, urinary side effects, CAMHS, SSRIs.

Abbreviations: CAMHS- Child and Adolescent Mental Health Services; SSRIs- Selective Serotonin Reuptake Inhibitors.

#### Background:

Evidence suggests that Serotonin has an important role in bladder control through central and peripheral neurological pathways. The three main serotonin receptor sites involved in the micturition pathway are 5-HT1A, 5-HT4, and 5-HT7. 5-HT7 and 5-HT4 are excitatory to acetylcholine release and 5-HT1A is inhibitory. Increased serotonergic activity leads to parasympathetic inhibition, which results in urine retention. It is through this mechanism of action and their effect on presynaptic serotonin 1A and peripheral 5-HT3 receptors that SSRIs were observed to have anti-enuretic effect. However, the exclusive role of serotonin in this regard is not fully understood because along with serotonin, other neurotransmitters, particularly acetylcholine are also implicated in micturition physiology. Acetylcholine is released from nerves innervating the detrusor muscle and causes bladder contraction resulting in voiding. Contrarily, adrenergic pathways lead to constriction of the bladder sphincter and promote continence. There have been suggestions that at lower intrasynaptic 5-HT concentrations, there is prevalence of inhibitory control of micturition, whereas excitatory effect is more pronounced at higher concentrations of 5-HT. This may suggest a dose-dependent relationship between Sertraline and urinary side effects. 1

# Case Reports:

#### Case 1

A 14 year old girl with a diagnosis of moderate depressive episode was prescribed Sertraline 150 mg once daily. On follow up with her community psychiatrist, mum reported that she had been having episodes of bedwetting on a regular basis for almost two weeks. There was no past history of enuresis, no medication changes, or changes to her diet or routine. She had been drinking fluids during the day and had limited fluid intake after 6 pm. On a visit to the Sheffield Children's Hospital, she had been diagnosed with a urinary tract infection and was prescribed a five-day course of antibiotics. She denied symptoms of abdominal pain, dysuria or fever.

On discussion with the trust pharmacist, it was reported that urinary incontinence is a rare listed side effect of Sertraline with nocturia occurring in 1 in 100 to 1 in 1000.<sup>2</sup> At further medication review appointments, the patient continued to report being incontinent on approximately every alternate night and had to use incontinence pads. It was agreed with the patient to reduce the dose of Sertraline to 100 mg once daily to test if her urinary incontinence was linked to Sertraline and review after 2 weeks in clinic. The reduction in Sertraline dose to 100mgs once daily did not alter the frequency of bedwetting that continued on most week nights and varied from being partial to full emptying of the bladder. As a result, she was then referred to the Paediatric Community Incontinence clinic for further investigation regarding the sudden onset of these night bedwetting episodes. Concurrently, Sertraline was gradually reduced and stopped. She was switched to Fluoxetine liquid for treatment of her depressive symptoms, which was titrated to a dose of 16 mg once daily. At the community continence clinic, urine dipstick was negative. Systemic examination including a neurological examination was unremarkable. Mum reported that since the change in medication from Sertraline to

Fluoxetine, there was a remarkable improvement in her urinary symptoms.

# Case 2

A 16 year old boy with a diagnosis of mixed anxiety and depressive disorder was initiated on Sertraline which was gradually titrated to a maximum dose of 200 mg once daily. He reported improvement in his symptoms of anxiety and depression. However, a few days into taking the higher dose, he experienced symptoms of hesitancy with micturition and failure to ejaculate. On reduction of Sertraline to 100 mg once daily, he reported complete resolution of urinary and sexual side effects, while still reporting a reactive and stable mood. Due to his significant progress, he was eventually discharged from CAMHS back to the care of his GP.

# Case 3

A 12 year old girl with a diagnosis of Generalized Anxiety Disorder and Attachment Disorder reported three incidents of urinary incontinence whilst being on Sertraline 200 mg once daily. Sertraline was discontinued by the patient against medical advice. No follow up information was available to observe for resolution of symptoms after discontinuation of Sertraline.

## Discussion:

Selective Serotonin Reuptake Inhibitors (SSRIs) are a very commonly used class of psychotropic medication in the CAMHS population to treat depression, anxiety, PTSD and OCD.<sup>3</sup> It is evident by the cases discussed above that SSRIs may have a key link in causing symptoms of urinary dysfunction, which may range from nocturnal enuresis to acute urinary retention. This could be explained by Serotonin's pivotal role in micturition through central and peripheral pathways. There is not enough evidence on the links in a child and adolescent population as most of the studies are on an adult cohort.<sup>4</sup>

## **Conclusion:**

In conclusion, it is important for clinicians to bear in mind the genitourinary side effects of SSRIs, which may be debilitating for patients in the CAMHS population. It is equally important for us as clinicians to educate young people and their parents about these potential side effects and how they can be managed. It has also been observed that higher doses of Sertraline have shown a possible link between onset of urinary side effects. In order to establish a significant causal and dose-related relationship on the onset and severity of genitourinary symptoms, studies with a larger sample size followed up over a longer period would be required.

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