Comardelle N, Edinoff A, Fort J. Delusions of Glass Under Skin: An Unusual Case of Somatic-Type Delusional Disorder Treated with Olanzapine. *Health Psychology Research*. 2022;10(2). doi:10.52965/001c.35500

General

Delusions of Glass Under Skin: An Unusual Case of Somatic-Type Delusional Disorder Treated with Olanzapine

Nicholas Comardelle[1] [a], Amber Edinoff[2], Juliana Fort[2]

[1] College of Medicine, Louisiana State University Health Shreveport, [2] Department of Psychiatry and Behavioral Medicine, Louisiana State University Health Shreveport

Keywords: Somatic-type Delusional Disorder, Olanzapine

https://doi.org/10.52965/001c.35500

Health Psychology Research

Vol. 10, Issue 2, 2022

Introduction

The management of delusional disorder (DD) remains difficult due to poor patient insight and a lack of definitive treatment guidelines. For the somatic subtype specifically, prior studies have shown successful treatment with the first-generation antipsychotics (FGA) pimozide, but these studies did not specify the nature of the delusions. It has been theorized that pimozide effectiveness is due to its unique ability to relieve itching sensations, which are commonly associated with somatic delusions (e.g., delusions of parasitosis). The use of FGAs is not without risk, however, and should be avoided when possible due to the significant side-effect profile. Thus, there is a need for safer alternatives for the treatment of somatic-type DD. This manuscript discusses a case of DD characterized by painful sensations of glass under the skin managed with the second-generation antipsychotic olanzapine.

Case

A 67-year-old female with a past medical history including depression presented to the ED with complaints of glass in her hands and fingernails bilaterally. The patient has been evaluated by several physicians in the past without any evidence of glass being found. She was able factually able to describe that others viewed her complaints as irrational, but she refused to accept this as truth. Cognitive screening testing was normal, and a physical exam showed several areas of excoriation on the hands and arms bilaterally, a removed left thumbnail, and a thin frame (BMI: 18.02). The patient was admitted to the psychiatry service, where organic causes were ruled out (infection, metabolic abnormalities, drug use). The patient received olanzapine 5mg PO nightly treatment with adjunctive psychotherapy and experienced acute psychotic relief after a two-day admission period. She did not endorse any side effects from the medication.

Discussion

To our knowledge, there haven't been prior studies exploring treatment efficacy in somatic-type DD subdivided by the nature of false bodily sensation. Despite this limitation, it was found that most cases of somatic-type DD characterized by foreign bodies under the skin were treated with pimozide. Although this drug appears to be a reasonable option for the more common presentation involving false pruritis, it might not be recommended for rare presentations that don't involve itchiness due to the high risk of adverse symptoms. Accordingly, clinicians should consider the nature of the delusions along with the unique side effect profile of the pharmacological therapy as any harm

a **Corresponding author:**
Nicholas J. Comardelle, BS
Louisiana State University Health Science Center Shreveport
College of Medicine
1501 Kings Hwy
Shreveport, LA 71103
Phone: (318) 675-8969
Njc001@lsuhs.edu

might outweigh the potential benefit. This was highlighted in the current presentation as clinicians determined olanzapine to be the most appropriate treatment despite no similar cases of DD described in the literature. Furthermore, this case exemplified the utility of second-generation antipsychotics in the treatment of somatic-type DD.

INTRODUCTION

Somatic-type delusional disorder (DD) is characterized by a false belief system involving bodily functions and sensations that is fixed despite evidence showing the contrary. DSM-5 diagnostic criteria further indicate that symptoms must be present for at least one month and be in the absence of other physiological or psychiatric explanations (e.g., substance abuse, dementia, obsessive-compulsive disorder). Unlike patients with schizophrenia, those with DD have otherwise normal functioning and do not experience additional psychotic symptoms such as hallucinations, disorganized speech, and grossly disorganized or catatonic behavior. If patients have concurrent mood alterations, the episodes must be of short duration relative to the total delusional period.[1]

DD is a somewhat rare diagnosis with an estimated lifetime prevalence of 0.2% in the United States according to the DSM-5.[1] One case-registrar study conducted by Portugal et al[2] involving 370 patients who filled DSM-4 criteria in south Barcelona further found that 5% of patients with DD had the somatic subtype; however, it should be noted that 23% were classified as 'not otherwise specified. This paucity may be due to low motivation to seek psychiatric care as patients typically maintain functionality and are mentally unaware of their illness. Furthermore, the combination of poor patient insight and low disease prevalence makes management and clinical research difficult.

There are no definitive treatment guidelines for DD, and it has been suggested that clinicians rely on what is known of schizophrenia management when caring for these patients.[3] Portugal et al[2] found that 81.4% of DD patients were managed with antipsychotic medication, 60% of which were on an atypical antipsychotic medication. For the somatic subtype specifically, pimozide has been classically used for treatment with one study finding 47 out of 64 patients with the somatic-type DD being treated with pimozide over a 10-year period to 2004.[4] Like other typical antipsychotics, however, this medication is associated with significant adverse effects including extrapyramidal symptoms and prolonged QT that requires periodic ECG monitoring. Therefore, safer and more convenient alternatives are needed. In the present case report, we present a rare case of somatic type DD being managed with olanzapine.

CASE PRESENTATION

A 67 y/o female with a past psychiatric history of depression and past medical history including hypertension presented to the ED with complaints of glass in her hands and fingernails bilaterally. She stated the glass has been present since cleaning a fallen barn on her family's property ~4 months prior to presentation, explaining "there must have been glass in the dirt." The patient reported that she had been evaluated by several physicians without any medical evidence of glass in her hands; however, she continued to endorse this idea as the painful sensations have persisted. She proceeded to reveal several areas of picking/excoriation on her hands/arms to display the glass, but none was seen. According to the patient, a physician instructed her to remove the glass herself, which lead to the accumulation of glass under her nails as well. She admitted to removing the nail bed of her L 1st finger with "instant relief once I took off the nail." The patient believed she might need a skin graft to further remove the remaining glass. She brought a heart-shaped tin can with her to show the glass she removed from her body, but only the removed nail bed was inside. According to the patient, several physicians and family members had counseled her with suggestions to see a psychiatrist, but she did not appear to understand their concerns. The patient stated she had been taking an opioid with "some" pain relief but stopped after running out 4 days prior to presentation; it was unknown where she got the medication. The patient also reported an associated 20-30 lb. weight loss since her symptoms began. No other complaints were reported by the patient.

Remarkable physical exam findings included excoriations on her hands and arms bilaterally and a removed left thumbnail. Mental status examination revealed a well-groomed, frail female in no acute distress. She displayed proper alertness, orientation, and concentration, and she scored a 26/30 on the Montreal Cognitive Assessment. Her speech was spontaneous, fluent, normal volume, and normal rhythm; however, she began to speak more rapidly with quick hand gestures when the subject of glass was broached. Her thought process was linear and organized with a plausible explanation as to how the glass got in her hands (i.e., cleaning the fallen barn) that did not involve magical or impossible thinking. She was factually able to describe that others viewed her ideas as irrational, but she refused to accept this as truth and has not made any attempts to suppress her false beliefs. Her intelligence was estimated to be average. She appeared to have a high level of neurocognitive and psychosocial functioning as demonstrated by a history of stable relationships and employment. No other delusions were present, and she denied HI, SI, AVH, neurovegetative symptoms of depression, and manic symptoms of bipolar disorder.

The patient was admitted to the psychiatry service for further medical and psychiatric evaluation. Infectious workups (i.e., HIV, neurosyphilis, hepatitis panel, urinalysis) and metabolic workups (i.e., vitamin B12, folate, TSH, CMP) were unremarkable. Serum ethanol was negative, and urine drug screen was positive for THC only. CT head without contrast did not display significant findings. Organic causes were deemed unlikely, and the patient was diagnosed with somatic type delusional disorder in accordance with the DSM-5. The patient resumed her home antihypertensive regimen as well as her normal 10mg PO escitalopram therapy for depression. To treat her delusions with associated weight loss, she was started on Olanzapine 5mg PO

nightly with adjunctive psychotherapy. The patient experienced acute psychotic relief with her treatment plan, and a coroner determined she was no longer a danger to self or others after a two-day admission period. She did not endorse any side effects from the medications.

DISCUSSION

The diagnosis and management of DD remains difficult due to poor patient insight, nuanced diagnostic criteria, and a lack of definitive treatment guidelines. In attempt to further understand the current approach taken by providers, Muñoz-Negro, et al[5] conducted a systemic review investigating clinician-rated scales of treatment response for DD prior to 2019. 437 patients treated with antipsychotics were included in the study, and investigators found that these drugs are an effective treatment option for DD with a good response observed in 32.3% of patients. First-generation antipsychotics (FGAs) demonstrated a slightly better outcome relative to second-generation antipsychotics (SGAs) (38.7% vs 29.9% good response), however, authors concluded that this provides little global advantage for most DD subtypes when considering the higher potential for adverse effects in FGAs. Relative to the SGAs, quality of life has been reported to be lower in patients taking FGAs,[6] which may be in part explained by an overall increased propensity of FGAs to cause extrapyramidal symptoms and hyperprolactinemia due to more potent anti-dopaminergic properties.[7,8] Additionally, the relatively decreased burden of side effects in SGAs may yield the added benefit of improved medication compliance and overall tolerability,[9,10] a feature of supreme importance when managing those with poor insight to their disease.

The one exception in which Muñoz-Negro, et al[5] concluded that FGAs may be considered an overall superior treatment option was when considering the somatic subtype of delusional disorder treated with pimozide. The somatic theme is typically one of three types: the delusion of bromosis (belief that one is emitting a bad body odor), dysmorphosis (belief that one has a deformed physical feature), or of parasitosis (the belief that one's skin is infested with insects, worms, or other foreign bodies).[11] Typically, those with delusions of parasitosis have complaints of severe pruritis and intense itching.[12] Researchers explain that pimozide's unique binding profile provides anti-delusional benefits along with itching and paresthesia relief via dopamine and 5-HT2 serotonin blockades respectively, which together allow for better alleviation of false bodily sensations.[5] Moreover, it has been proposed that pimozide may still provide relief in the absence of pruritus and formication through 5-HT2 receptor antagonism.[5,13] This notion is largely based on the observation that delusions of parasitosis involve perceptual illusions that resemble what is seen during LSD intoxication, a process known to be mediated by serotoninergic effects[14]; however, this topic remains controversial due to a lack of response to SGAs in dysmorphic somatic delusions.[15]

Similarly, a review by Manschreck et al[4] in 2006 showed a significantly greater outcome among those treated with pimozide for somatic delusions relative to erotomanic, jealous, persecutory, grandiose, and mixed subtypes; however, the natures of the false bodily sensations were not specified and may have responded differently from one another. While the delusions described in the present article can be described as delusions of parasitosis (i.e., delusions of foreign bodies in the form of glass), the patient complained of pain rather than itching and paresthesia; therefore, the anti-opiate effects of pimozide provide little benefit. To our knowledge, this is the only case of delusional disorder presenting characterized by painful sensations of glass under the skin described in the literature, which might contribute to this abnormal presentation.

For patients with somatic delusions involving painful sensations in the absence of itchiness or paresthesia, pimozide might not be recommended when considering the side effect profile. As demonstrated in the present case, the SGA olanzapine can serve as an appropriate alternative as D2 and 5-HT2 receptor antagonism can be maintained in a relatively safe manner.[16] The most significant adverse effect of olanzapine therapy is an increased risk of weight gain, but this metabolic effect provides little reason to avoid the drug in those with low BMI such as the patient described here (BMI: 18.02).[17] Because patients with DD often feel invalidated by taking medication, the supplemental advantage of weight gain in thin patients might also increase motivation to continue medical therapy. Non-pharmacological approaches (i.e., psychotherapy) have a relatively lower reported efficacy (10%)[18] compared to antipsychotic medications (32.3%)[5] and thus are most effectively used in an adjunctive role. Similarly, clinicians must establish trust with patients with delusional disorder through listening empathetically and assessing how the disease is impacting the person's quality of life in order to prevent "doctor hopping" and to maintain therapeutic alliance.[19]

CONCLUSION

Olanzapine pharmacotherapy successfully provided acute relief in this rare presentation of somatic-type DD characterized by the false belief of having glass stuck under the skin and nails with painful sensations. Prior studies have suggested the use of the FGA pimozide for this subtype of DD; however, SGAs should be substituted when possible due to the risk of unwanted, harmful reactions associated with FGAs, particularly in the absence of delusions characterized by pruritic sensations. Accordingly, adverse effects should be strongly considered by clinicians choosing the specific antipsychotic for the treatment of DD as any harm might outweigh the potential benefits, especially if high pretreatment functionality was present. In cases of low patient BMI, the primary adverse effect of weight gain from olanzapine therapy may be considered a benefit due to nutrition restoration. Overall, SGAs appear to have significant utility in the treatment of DD as demonstrated by relief in this case of somatic type delusional disorder managed with olanzapine.

Submitted: February 21, 2022 EDT, Accepted: April 04, 2022 EDT

REFERENCES

1. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*. 5th ed. American Psychiatric Association; 2013. doi:10.1176/appi.books.9780890425596

2. de Portugal E, González N, Haro JM, Autonell J, Cervilla JA. A descriptive case-register study of delusional disorder. *Eur Psychiatr*. 2008;23(2):125-133. doi:10.1016/j.eurpsy.2007.10.001

3. Smith DA, Buckley PF. Pharmacotherapy of delusional disorders in the context of offending and the potential for compulsory treatment. *Behav Sci Law*. 2006;24(3):351-367. doi:10.1002/bsl.683

4. Manschreck TC, Khan NL. Recent advances in the treatment of delusional disorder. *Can J Psychiatry*. 2006;51(2):114-119. doi:10.1177/070674370605100207

5. Muñoz-Negro JE, Gómez-Sierra FJ, Peralta V, González-Rodríguez A, Cervilla JA. A systematic review of studies with clinician-rated scales on the pharmacological treatment of delusional disorder. *Int Clin Psychopharmacol*. 2020;35(3):129-136. doi:10.1097/yic.0000000000000306

6. Gründer G, Heinze M, Cordes J, et al. Effects of first-generation antipsychotics versus second-generation antipsychotics on quality of life in schizophrenia: a double-blind, randomised study. *Lancet Psychiatry*. 2016;3(8):717-729. doi:10.1016/s2215-0366(16)00085-7

7. Divac N, Prostran M, Jakovcevski I, Cerovac N. Second-generation antipsychotics and extrapyramidal adverse effects. *Biomed Res Int*. 2014;2014:1-6. doi:10.1155/2014/656370

8. Halbreich U, Kinon BJ, Gilmore JA, Kahn LS. Elevated prolactin levels in patients with schizophrenia: mechanisms and related adverse effects. *Psychoneuroendocrinology*. 2003;28(SUPPL. 1):53-67. doi:10.1016/s0306-4530(02)00112-9

9. Bahta M, Ogbaghebriel A, Russom M, Tesfamariam EH, Berhe T. Impact of adverse reactions to first-generation antipsychotics on treatment adherence in outpatients with schizophrenia: a cross-sectional study. *Ann Gen Psychiatry*. 2021;20(1):1-7. doi:10.1186/S12991-021-00348-0/TABLES/2

10. Solmi M, Murru A, Pacchiarotti I, et al. Safety, tolerability, and risks associated with first- and second-generation antipsychotics: a state-of-the-art clinical review. *Ther Clin Risk Manag*. 2017;13(757):757-777. doi:10.2147/tcrm.s117321

11. Weintraub E, Robinson C. A case of monosymptomatic hypochondriacal psychosis treated with olanzapine. *Ann Clin Psychiatry*. 2000;12(4):247-249. doi:10.3109/10401230009147119

12. Torales J, García O, Barrios I, et al. Delusional infestation: Clinical presentations, diagnosis, and management. *J Cosmet Dermatol*. 2020;19(12):3183-3188. doi:10.1111/jocd.13786

13. Lorenzo CR, Koo J. Pimozide in dermatologic practice: A comprehensive review. *Am J Clin Dermatol*. 2004;5(5):339-349. doi:10.2165/00128071-200405050-00007

14. King B. Hypothesis: Involvement of the serotonergic system in the clinical expression of monosymptomatic hypochondriasis. *Pharmacopsychiatry*. 1990;23(02):85-89. doi:10.1055/s-2007-1014488

15. Phillips KA. Pharmacologic treatment of body dysmorphic disorder: Review of the evidence and a recommended treatment approach. *CNS Spectr*. 2002;7(6):453-463. doi:10.1017/s109285290001796x

16. Nagai N, Watanabe K. [Olanzapine]. *Nihon Rinsho*. 2013;71(4):666-672. doi:10.1177/1049909112441241

17. Allison DB, Mentore JL, Heo M, et al. Antipsychotic-induced weight gain: a comprehensive research synthesis. *Am J Psychiatry*. 1999;156(11):1686-1696. doi:10.1176/AJP.156.11.1686

18. Edwards R. Delusions of parasitosis: A Review. *Br Med J*. 1977;1(6070):1219. doi:10.1136/bmj.1.6070.1219-b

19. Aw DCW, Thong JY, Chan HL. Delusional Parasitosis: Case Series of 8 Patients and Review of the Literature. *Ann Acad Med Singapore*. 2004;33(1):89-94.