

Psychopharmacotherapy of Pica- *How Much Do We Know?*

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ABSTRACT ~ *There is little evidence for psychopharmacotherapy in pica. A few studies reported some benefit from the use of SSRIs, atypical antipsychotics and methylphenidate. That said, evidence to deploy these agents remains, at large, flimsy. Here, despite scarcity, we review available literature and draw some generalities that can inform decision-making on clinical grounds.* Psychopharmacology Bulletin. 2024;54(4):119–123.

Pica (*L. magpie*) is persistent (> 1 month) consumption of non-nutritive non-food items. Developmental age should be of ≥ 2 years (mouthing behaviour is ubiquitous before that). It should not be culturally sanctioned.¹ Differential² include- neurodevelopmental (ASD, ID, ADHD), regression (psychosis, dementia), nutritional (iron deficiency), neurological (Kluver-Bucy syndrome), psychological (OCD, unmet oral needs), or cultural (rituals).

Common patterns of pica are depicted in Table 1.

There is no definitive treatment for pica. Treatment is better tailored to patients' needs and multi-pronged.

For ASD/ID- treatment is chiefly behavioural.³ This entails- restraining (mechanical or physical), differential reinforcement of alternative (DRA) or incompatible behaviour (DRI), response blocking, punishment, aversive stimuli ... For the more cognitively abled, CBT akin to other eating disorders can be deployed. Environmental manipulation is typically needed (play/enrichment activities, pica-proof house, close supervision ...)

Currently, there is little research into the role of medications in pica. If Fe deficiency is identified, replacement would be necessary. There is little evidence for

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TABLE 1

COMMON PATTERNS OF PICA

<i>Amylophagia</i>	Starch
<i>Cautopyreiophagia</i>	Burnt matches
<i>Coprophagia</i>	Feces
<i>Geomelophagia</i>	Raw potatoes
<i>Geophagia</i>	Clay
<i>Hyalophagia</i>	Glass
<i>Lithophagia</i>	Stones
<i>Pagophagia</i>	Ice
<i>Plumbophagia</i>	Lead
<i>Sapophagia</i>	Soap
<i>Trichophagia</i>	Hair
<i>Xylophagia</i>	Paper

psychopharmacotherapy in pica. A few studies reported some benefit from the use of SSRIs, atypical antipsychotics and methylphenidate. That said, evidence to deploy these agents remains, at large, flimsy.

120

Naguy et al.

SSRIs

Stein⁴ et al. tested five cases for the hypothesis that at least some cases of pica may usefully be conceptualised as lying within a compulsive-impulsive spectrum. Bhatia⁵ et al. reported on an interesting case of an adult female patient who developed an impulse to ingest chalk only in stressful situations. These thoughts were ego-dystonic and kept on hammering her mind until she ate it. She responded favourably to escitalopram and clonazepam over three weeks. Similarly, Bharti⁶ et al. reported a case of pica of paper eating as a manifestation of compulsion in a 15-year-old girl that ultimately responded to fluoxetine and CBT. Gupta⁷ et al. also reported a case of compulsive sponge eating in association with iron deficiency and celiac disease. They postulated micro-nutrient deficiency could be a common mediator of pica and OC symptoms. Gundogar⁸ et al. reported three cases of pica with phenomenological similarities to OCD that responded to SSRIs treatment.

A case of pica during pregnancy was reported by Upadhyaya and Sharma⁹ describing a 26-year old female presenting with consumption of uncooked rice and wheat that started during her third pregnancy and continued postpartum. These symptoms presented during the last 2 pregnancies. After family history assessment, she was diagnosed with obsessive-compulsive disorder presenting solely as pica. She was

treated with fluoxetine 40 mg daily, and at 2 months, her eating habits improved.

Kanamori¹⁰ et al. recently reported on an 80-year-old woman with AD hospitalized for aggravated pica, including eating weeds in the facility's garden and eating a dishwashing sponge. Her pica was accompanied by oral tendency, prosopagnosia, and placidity. She was prescribed rivastigmine and memantine, but these were ineffective for her pica. She was given olanzapine and perospirone, but both were discontinued due to over-sedation and severe extrapyramidal symptoms, respectively. She was switched to trazodone and fluvoxamine, both of which have demonstrated effectiveness for pica in frontotemporal dementia (FTD). Her pica behaviours then disappeared without daytime sleepiness. In this case, pica with oral tendency, which was accompanied by prosopagnosia and placidity, has been interpreted as Klüver–Bucy syndrome, which is often seen in FTD, but also occurs in late-stage AD.

METHYLPHENIDATE

121

Naguy et al.

Although ADHD has been associated with comorbid eating disorders especially bulimia nervosa, association with pica is only limited to case reports and the relationship can be in fact bidirectional.^{11–12}

Pica might be related to DA dysregulation. In a DBPC trial evaluating the hypothesis that pica may be exacerbated by the use of antipsychotics, when compared to placebo, all three subjects engaged in higher levels of pica during the thioridazine phase.¹³ These subjects showed improvement in pica after methylphenidate (mechanistically a DA agonist). Pica was reported following commencement of atypical antipsychotics risperidone and olanzapine in 2 cases.¹⁴ Differential effects of methylphenidate and atypical antipsychotics on appetite might be contributory.

We¹⁵ similarly reported a case of preschooler ADHD masquerading as cautoxyreophagia exacerbated by risperidone and improved by methylphenidate treatment. We reckoned that clinicians should be vigilant to probe executive dysfunction (e.g., ADHD) in the occasional instances where neurotypicals presenting with pica that cannot be accounted for by major psychopathology or nutritional deficiency. Use of stimulants in these scenarios is then warranted whilst high-potency antipsychotics are better avoided.

In line with DA dysregulation in pica, Brahm¹⁶ et al. reported Pica episode reduction following initiation of bupropion, an NDRI antidepressant, in a developmentally disabled adult.

Atypical Antipsychotics

We could locate a single case report¹⁷ of a 42-year-old woman with severe ID, ASD, and epilepsy residing in a group home, with a long history of pica behavior, involving cigarette butts, socks, pieces of cloth, and many small objects. She was nonverbal and had severe stereotypies including rocking and repetitive grunting. Cranial nerve, motor, and gait exams were unremarkable. She was commenced on the SSRI fluvoxamine with no effect. She was then swapped to olanzapine 2.5 mg/day, with a marked reduction in pica behavior noted by caregivers. This response has been maintained for over 36 months. Given the foregoing discussion, use of olanzapine sounds counter-intuitive. Authors attributed that response to a pseudo-specific effect of olanzapine (!)

Pica was also reported to be responsive to aripiprazole¹⁸ (partial DA agonist) (*vide supra*).

Liu¹⁹ et al. recently reported a complex case of pica and non-suicidal self-injury in a 13-year-old girl that was admitted following the ingestion of two batteries. She featured compulsive behaviours such as consuming inedible items or self-inflicted cutting. After receiving a combination of pharmacological treatments (quetiapine, lithium and sertraline), cognitive behavioral therapy (CBT) and modified electroconvulsive therapy (MECT) for 25 days, she was discharged in remarkable improvement.

It would be conceivable that antipsychotic can target pica in context of disorganized psychoses as in the case reported by You²⁰ et al. describing a 34-year-old male with decompensated schizophrenia. Emergency medical services brought the patient from a state facility as he was scavenging and eating foreign objects. Upon initial evaluation, no notable nutritional deficiencies were noted. After surgical removal of foreign objects, he was started on antipsychotics. His pica was determined to be due to his active psychosis involving delusions, disorganized thought processes, and loosening of associations. His psychosis improved on paliperidone intramuscular injection and oral olanzapine, wcoincided with resolution of pica. This tallies with Jain²¹ et al. reporting on a case of worsening pica which preceded exacerbation of psychosis in an 18-year-old female that was managed with risperidone along with complete remission of psychosis and improvement in the severity of pica.

Quick takes—Based on scant literature on psychopharmacology of pica, and in our clinical experience, we can wager that

- Pica in neurodisabilities respond better to ABA (applied behavioural analysis) up to 80%
- Pica in pregnancy- commonly related to Fe deficiency and replacement is advised

- Pica in psychotic regression- responds to antipsychotics
- Pica related to executive dysfunction- responds preferentially to methylphenidate
- Pica on compulsion-impulsion spectrum- responds to SSRIs ♣

DISCLOSURES

Authors declare no competing interests.

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