Could oxytocin be useful in treating psychiatric disorders?

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The hormone oxytocin could play a role in treating psychiatric disorders such as autism and schizophrenia, according to a review article in the September *Harvard Review of Psychiatry*.

Among other biological effects, oxytocin is "an important regulator of human social behaviors," according to the research review by Dr David Cochran of University of Massachusetts Medical School and colleagues. They discuss the preliminary but encouraging evidence that oxytocin could be a useful treatment for certain mental health diagnoses—particularly those involving impaired social functioning.

A Common Hormonal Factor in Psychiatric Disorders?

Oxytocin is a neuropeptide hormone, probably most familiar for its role in initiating labor and breast milk flow in pregnant women. But a growing body of evidence in animals and humans shows that it also plays an important role in regulating social behaviors. In their review, Dr Cochran and colleagues found evidence of oxytocin's involvement in "social decision making, evaluating and responding to social stimuli, mediating social interactions, and forming social memories" in humans.

Based on these effects, researchers have suspected that oxytocin may be a common factor in certain psychiatric disorders. The reviewers analyze the evidence for oxytocin's involvement in specific disorders—including

some early research on oxytocin as a potential treatment for these conditions.

Some studies have reported a "dysfunction in oxytocin processing" in children (although not necessarily adults) with autism and related disorders. There's also evidence that genes affecting oxytocin—such as the oxytocin receptor gene, OXTR—may be involved in the development of autism spectrum disorders.

Possible Treatment Benefits in Autism and Schizophrenia

Based on initial trials, oxytocin may one day "be a useful treatment agent for improving some aspects of social cognition and for reducing repetitive behaviors" in patients with autism spectrum disorders, although studies are only in the early stages to fully evaluate clinical effectiveness. The authors discuss a case report of significant reductions in autism severity with oxytocin, and the only controlled trial of long-term oxytocin treatment showed improvement in identifying emotions and quality of life measures.

Studies of oxytocin's relationship to schizophrenia have yielded conflicting results—associations with oxytocin-related genes don't appear as strong as for autism. Nevertheless, some studies have suggested that oxytocin might be a helpful treatment for patients with schizophrenia, with trials reporting encouraging effects on schizophrenia severity and on social cognition.

Because oxytocin is involved in responses to stress, studies have also looked at its potential role in mood disorders and anxiety disorders. For example, there's evidence that oxytocin may be involved in beneficial responses to electroconvulsive therapy for severe depression.

But so far, there's little evidence that oxytocin is a useful treatment for anxiety and depression. The same is true for early studies of oxytocin for treatment of obsessive-compulsive disorder and borderline personality disorder.

On balance, "The evidence suggests a role of oxytocin in the pathophysiology of some psychiatric disorders, particularly those characterized by impairments in social functioning," Dr Cochran and coauthors write. "However, the preliminary nature of the currently available data precludes a clear understanding of the exact nature of this role."

Thus despite some promising results, it's much too early to conclude that oxytocin is a helpful treatment for autism, schizophrenia, or any other psychiatric disorder. Even if the evidence were stronger, there's currently no reliable way of giving oxytocin treatment so that it gets to the brain in a predictable way. Nasal administration seems to be the most promising alternative, but larger studies are needed to understand how it gets to the brain receptors necessary for its effects.

Meanwhile, researchers will continue their attempts to clarify oxytocin's role in psychiatric disorders and the effects of treatments targeting this essential hormone. Dr Cochran and colleagues conclude that "proper clinical trials are only recently being undertaken," which "should provide a better understanding of the extent and limitations of the clinical effects of externally delivered oxytocin."

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