What this article is about

This article is a review of current evidence regarding drug treatments for gambling disorder. Gambling disorder is a persistent pattern of gambling that leads to many negative consequences. These can include financial, social and family problems. Although much is still unknown about the biological and neurological mechanisms of the disorder, several brain pathways may play crucial roles.

The dopamine pathway is responsible for reward and motivation. Some research shows that people with gambling disorder have higher dopamine levels than people without the disorder. Serotonin is involved in impulsivity and ability to inhibit an action. It plays an important role in people’s ability to withstand gambling urges and stop gambling once they have started. The noradrenergic pathway is responsible for arousal and novelty seeking. The opioid pathway is involved in pleasures and urges. Less is known about the roles of these two pathways in gambling disorder, but research shows that gamblers have higher levels of noradrenaline than non-gamblers, and opioids are involved in various reward processes in the brain.

Given their roles in gambling disorder, drug treatments that target these brain pathways have been used in gambling disorder. Thus, this article reviews clinical studies on the use of various drug treatments for gambling disorder.

What was done?

The authors searched for relevant studies using two databases, PubMed and Google Scholar. Studies published before 1990 and animal studies were excluded. A summary table of the 32 included studies describes for each study: the drug involved, the type of study (e.g., double-blind, open-label), participant characteristics (number of participants, gender, average age), methods (how gambling disorder was assessed, length of study, drug dosage), co-occurring disorders (e.g., anxiety, depression), results, and dropout rate.

In the article, the authors also summarized the studies according to the types of drugs involved.

What you need to know

To date, the only drug with clearly documented positive effects for gambling disorder is naltrexone. Naltrexone is an opioid antagonist and works by blocking the effects of opioids in the brain and decreasing gambling craving. There were five studies on the use of naltrexone for gambling disorder, including both open-label and double-blinded.
placebo-controlled studies. Nalmefene, another opioid antagonist, was also found to be effective in two double-blinded, placebo-controlled studies. However, the dose-response effect of nalmefene remains unclear.

Results on the use of anti-depressant drugs are mixed. Selective serotonin reuptake inhibitors (SSRIs) are a group of drugs commonly used to treat depression, as well as anxiety and some personality disorders. While several open-label studies reported positive effects, they were not confirmed in other open-label studies or in double-blind studies. Importantly, double-blind studies were missing for many SSRIs.

For other anti-depressant drugs, such as bupropion, there is not enough research to reach conclusions about their effectiveness. Bupropion targets dopamine and noradrenaline reuptake. It was found to be effective for patients with gambling disorder and ADHD in a few studies, although a high drop-out rate was reported in one study.

Studies on other drug treatments, such as lithium, were also included. Lithium is a mood stabilizer used for the treatment of bipolar depression. Two studies were available on the use of lithium for patients with gambling disorder and bipolar depression. Both showed that lithium could have positive effects in reducing the symptoms of gambling disorder. For many other drugs, there are not enough data or available data are not clear with regard to their effects.

Who is it intended for?

This article is intended for gambling treatment providers and clinicians, as well as researchers. It provides insight into the current state of knowledge on drug treatments for gambling disorder. It also shows that more clinical studies are needed to test the effects of various drug treatments. Moreover, further research is needed to understand the long-term effects of these drugs.

About the researchers

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