STUDENTS' CORNER
LETTER TO THE EDITOR

# Medication assisted treatment for substance use disorder

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*Dear Editor*, We read with interest the article, 'State of the Art Treatment Options for Pakistan's Opioid, Alcohol, and Methamphetamine Crisis,' which discusses medication-assisted treatment for substance use disorders (SUDs). In relation to this, new studies have highlighted the potential role of glucagon-like peptide-1 (GLP-1) in SUD.GLP-1 is an incretin hormone that regulates hunger and satiety and is produced in the small intestine and the brainstem.[1] GLP-1 Receptor Agonists (GLP-1 RA) are primarily used to treat diabetes mellitus and obesity due to their ability to slow gastric emptying and stimulate insulin production. These drugs include exendin-4, liraglutide, dulaglutide and semaglutide. However, ongoing studies are showing promising effects of GLP-1 RA use in SUD.

One preclinical study by Harasta et al. demonstrated that GLP-1 RA reduces cocaine induced dopamine surges by increasing the expression of the dopamine transporter on cell surface, facilitating the removal of excess dopamine from synapses. This mechanism weakens cocaine's rewarding effects.[2]

An early preclinical study on alcohol showed correspondence between GLP-1 and alcohol intake showed that male rats with a 10-week history of alcohol consumption that were treatmented with exendin-4 were found to exhibit reduced alcohol consumption.[3] Now recent studies have been testing other agents such as liraglutide and semaglutide injections with similar results thus supporting the potential ofGLP-1 RA for SUD.[4]

In humans, one such study where diabetic patients given liraglutide also reported a reduction in alcohol intake.[5] Despite promising findings from animal studies, human data remains limited and larger clinical trials are needed to determine the effect of these drugs on humans.

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## References

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