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Tuberculosis drug can improve effect of CBT

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A new study from Sweden's Karolinska Institutet shows that the effect of internet-based CBT (cognitive behavioural therapy) for people with people with obsessive-compulsive disorder (OCD) may be boosted with a drug called d-cycloserine, which has long been used to treat TB. According to the results, which are published in the journal *JAMA Psychiatry*, this enhancing effect is counteracted by antidepressants.

"These types of drugs are sometimes called cognitive enhancers, as they affect specific brain processes that can speed up and boost the effects of psychotherapy," says Dr Christian Rück, psychiatrist and researcher, who conducted the study with his colleagues at Karolinska Institutet's Department of Clinical Neuroscience. "You could say that it's to CBT what spinach is to Popeye."

The active therapeutic component of CBT is based on the concept of exposure or extinction, whereby the individual puts him/herself in feared situations that evoke feelings of discomfort or anxiety and remains there until the sensation wanes. D-cycloserine (DCS) is an old tuberculosis drug that also affects one of the brain's most common receptors, the NMDA receptor. Previous studies have shown, for example, that DCS can amplify the effect of CBT if taken just prior to exposure to the fear-inducing stimulus.

In the present study, the researchers tried adding DCS to online CBT for people with OCD. Previous research had shown that DCS can speed up the therapeutic effect of CBT for this disorder, but no study had been large enough to demonstrate lasting effects once the therapy has

finished. The study randomly assigned 128 people with an OCD diagnosis to either a DCS or a placebo group.

The initial analysis indicated that while there was no difference between DCS and placebo, the effect of online CBT was considerable. In their subsequent analysis, the team therefore took into account whether the participants were also taking antidepressants. Doing so, they found that those not on antidepressants responded much better to DCS.

"This tells us that the mechanism for DCS can be affected by antidepressants or vice versa and that it might one day be possible to use DCS and similar substances to boost the effect of CBT," says Dr Rück. "Our study is the largest to date on DCS and OCD, but more research needs to be done to substantiate these positive effects and to fully understand and utilise the biological mechanisms behind effective CBT therapy."

More information: "D-Cycloserine vs Placebo as Adjunct to Cognitive Behavioral Therapy for Obsessive-Compulsive Disorder and Interaction with Antidepressants; A Randomzed Clinical Trial." *JAMA Psychiatry*, online 13 May 2015, DOI: 10.1001/jamapsychiatry.2015.0546

Provided by Karolinska Institutet

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