

Memory-enhancing drug may improve exposure therapy for PTSD patients

November 3 2011

A memory-enhancing drug may improve the speed and effectiveness of prolonged exposure therapy for post-traumatic stress disorder (PTSD) patients, according to a new pilot study by psychologists at The University of Texas at Austin, the University of Washington and the University of Pennsylvania.

To lessen the time it takes for PTSD patients to recover, University of Texas at Austin psychology professors Michael Telch and Francisco Gonzalez-Lima, along with their team of researchers, are pairing prolonged exposure therapy with United States Pharmacopeia (USP) methylene blue.

In prolonged exposure therapy, patients repeatedly recount a fearful event. As the patients begin to look at the memory differently, the memory has less control over their lives.

The researchers believe the FDA-approved compound methylene blue, which significantly improved fear extinction in rats in an earlier study conducted in the Gonzalez-Lima Lab, will help strengthen memory that occurred during therapy sessions with PTSD patients. Normally, about two-thirds of PTSD patients treated with prolonged [exposure therapy](#) during ten 90-minute sessions no longer exhibit PTSD.

As part of the study, respondents take a placebo pill or a dose of USP methylene blue after a therapy session. The researchers theorize the drug will help patients recover faster and better in only six daily one-hour

sessions.

Post-traumatic stress symptoms often emerge immediately after [traumatic experiences](#), such as combat experience, abuse, rape, robbery, accidents and [natural disasters](#). For most, these symptoms subside on their own soon after the trauma. However, about 30 percent of trauma victims go on to develop PTSD in which their trauma memories continue to haunt them and create significant distress and life impairment for months or years after the event.

Because prolonged, repeated recall of [traumatic memories](#) during behavior therapy stimulates new adaptive learning around the memories, the researchers predict that patients given a memory boost with USP methylene blue immediately after therapy sessions will make more lasting gains during therapy than those who do not take the medication.

Taken orally, the chemical properties of USP methylene blue affect regions of the brain, such as those stimulated after thinking about a memory.

"Methylene blue easily crosses the blood-brain barrier and accumulates inside activated brain cells," Gonzalez-Lima says. "Once inside the neurons, the substance zooms in on mitochondria - the power house of the cell - to keep it active and enable the brain cells to keep processing the memory."

Provided by University of Texas at Austin

Citation: Memory-enhancing drug may improve exposure therapy for PTSD patients (2011, November 3) retrieved 21 July 2023 from <https://medicalxpress.com/news/2011-11-memory-enhancing-drug-exposure-therapy-ptsd.html>

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