Propranolol Shows Early Promise for PTSD

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MONTREAL – Treatment of posttraumatic stress disorder with the beta-blocker propranolol might improve memory consolidation by inhibiting protein synthesis in the brain, reported researchers at the International Society for Traumatic Stress Studies.

“Do not erase memories; this is a misnomer,” clarified Alun Brunet, Ph.D., of the department of psychiatry at McGill University and a researcher at the Douglas Mental Health Institute, both in Montreal. Brunet presented several studies conducted by his group that suggest this pharmacologic interruption of memory might dampen emotional response to the information, presenting a treatment optimization opportunity for posttraumatic stress disorder (PTSD).

Current treatment for PTSD is centered on psychotherapy that focuses on exposure to the traumatic memory and learning new responses to it. Dr. Brunet and his co-workers have been working on this for about one-third of patients treated this way experience a lasting, clinically meaningful improvement, he said.

Propranolol treatment takes a different approach. It is based on the notion that memories, once they are consolidated, can be retrieved, and they exist in a labile state during which they are susceptible to modification until they are consolidated.

During the labile window of opportunity, which typically lasts several hours, administration of propranolol can strip the memory of its emotional meaning, making it less stressful, he said.
Dr. Brunt and his colleagues asked the patients to recall their memory by writing a trauma script and outlining their thoughts and emotions in their therapeutic experiences. Nine patients were then given a two-dose regimen of fast-acting melatonin (6 mg) immediately after memory recall followed by an extended-release propranolol dose (60 mg) 75 minutes later, and the other 10 patients received placebo. One week later, after reviewing their trauma scripts, patients' physiological responses to the memories were compared, using heart rate, skin conductivity, and event-related electromyography (EMG) measurements. Dr. Brunt reported significant differences between the placebo and treatment groups on heart rate and skin conductivity tests but not on EMG. This work is pioneering. We should have some patience about this and appreciate that this is a new paradigm in mental health research.