Easing the stress of trauma

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Post-traumatic stress disorder (PTSD) affects as many as one in five of all Americans who survive a harrowing experience like rape, assault, war or terrorism. It has emotionally paralyzed survivors of 9/11 and broken up survivors' families.

There is no broadly accepted treatment that can lower the chance of developing the disorder, but thanks to a Tel Aviv University researcher, a medical means of preventing PTSD may be just around the corner.

Prof. Joseph Zohar from the Sackler Medical School, Tel Aviv University, has found that an injection of cortisol shortly after exposure to a traumatic event may prevent the onset of PTSD. He is now taking his animal model findings to the U.S. National Institute of Health and hopes to start clinical trials on this exploratory research within the next year.

The research was recently published in the journal *Biological Psychiatry*.

PTSD Can Strike "Anyone, Anytime"

Currently, a diagnosis of PTSD is made only after an individual has been living with an acute stress reaction for one month. By then it may be too late to counteract the syndrome.

"Ten to twenty percent of all individuals exposed to trauma develop PTSD," says Prof. Zohar. "The challenge is to try to prevent or reduce these numbers. Until now, the clinical and research focus has been on

treating PTSD once it developed. We propose to shift the focus to prevention. Based on an animal model, our new clinical findings pave the way for a potential preventive treatment for future victims via cortisol injections."

Although experienced widely among soldiers returning home from Iraq and Afghanistan, PTSD can strike anyone — anytime — who has witnessed or experienced a life-threatening event. Its victims dissociate from loved ones and may relive the traumatic event through everyday triggers, such as the smell of a neighbor's barbecue or a sound on TV.

Normally, the production of cortisol, a stress hormone, increases immediately after the trauma, but with time returns to normal levels. In those who are diagnosed with PTSD, however, the body's hormonal system is dysfunctional: there is less secretion of cortisol after exposure, and researchers believe that this underproduction increases vulnerability to PTSD. Researchers propose that cortisol might be linked to the individual's ability to forget memories of the traumatic event.

The Persistence of Memory

Researchers from both Tel Aviv University and Ben Gurion University, found in an animal model that a high dose of corticosterone, when given immediately after the stress event, reduces the effect of trauma in mice. They believe that corticosterone may dampen an animal's ability to "remember" the initial trauma time and time again.

The "stressor" in the mouse experiment was litter soaked in cat urine. Twenty-five percent of the mice presented with the litter showed signs of extreme stress, which the researchers correlated to acute stress reaction in humans. Mice that were given shots of corticosterone shortly after their exposure were significantly less "tense" when reminded of the initial trauma by the presentation of a "stressor reminder" stimulus.

The researchers' next step is to try this potential treatment option on humans in a controlled clinical setting. "The animal model we developed has given us the basis for investigating this important condition, and it has become an essential tool for clinicians around the globe," adds Prof. Zohar, an internationally recognized expert in the field of PTSD and obsessive-compulsive disorders. He has established important international organizations in these fields and advises institutions like the World Health Organization.

Source: American Friends of Tel Aviv University