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Researchers find possible drug target for PTSD

Mon, Sep 5 2011

By Julie Steenhuysen

CHICAGO (Reuters) - People with post-traumatic stress disorder appear to have lower levels of a specific kind of brain chemical known as serotonin 1B, and targeting this with drugs could lead to the first treatments specifically targeting the disorder, researchers said on Monday.

Currently, doctors use antidepressants and anti-anxiety drugs to treat PTSD, but these are largely ineffective and were never specifically developed to treat the disorder, in which trauma victims suffer from recurrent memories of trauma, intense guilt or worry, angry outbursts and bad dreams.

"The medications we have these days are not working for PTSD," said Dr. Alexander Neumeister of the Mount Sinai School of Medicine, whose study appears in the Archives of General Psychiatry.

To address this, Neumeister and a team at the Yale Positron Emission Tomography Center used imaging to study the specific differences in the brain between people who have PTSD and others who have had traumatic experiences but do not have PTSD.

For the study, researchers performed positron emission tomography or PET scans of 49 PTSD patients whose conditions arose from a variety of traumatic events, including childhood abuse, domestic violence and military service.

Researchers also looked at the brains of 20 trauma victims with no PTSD and 27 healthy adult volunteers.

They found that people with PTSD had changes in the serotonin 1B receptor, a key neurotransmitter that in animal studies appears to be especially sensitive to stress.

The researchers found that levels of serotonin 1B were substantially lower in patients with PTSD than in healthy patients. Levels of this neurotransmitter were also slightly lower in the non-PTSD group who had been exposed to trauma compared with the healthy volunteers.

And the younger a person was when the trauma occurred, the bigger the difference.

"In those individuals who had early trauma in their life, we found the most severe alteration in the serotonin 1B receptor," Neumeister said in a telephone interview.

The findings, which need to be confirmed by bigger studies, offer a first step in developing drugs specifically designed to target brain changes that occur in people with PTSD.

"Currently, the only medical treatment options for the nearly 8 million American adults with PTSD are anti-depressants and anti-anxiety medications, which show little benefit in improving the mental health of these patients," Neumeister said in a statement.

Neumeister said several drug companies, including Eli Lilly and Merck & Co already are exploring drugs that target this receptor, and other drug targets are being looked at as well.

"Hopefully in the near future we will have drugs that will interfere with this receptor," Neumeister said.

(Editing by Cynthia Osterman)