

Antidepressant Can Change Patient's Personality

December 7 2009, By Megan Fellman

(PhysOrg.com) -- The nation is still debating the effects of antidepressant medications on brain chemistry almost 20 years after publication of the best-seller "Listening to Prozac." Though selective serotonin reuptake inhibitors (SSRIs) are widely used to treat depression today, understanding of their mechanisms remains limited.

Now a new study led by a Northwestern University psychologist shows for the first time that an antidepressant medication can change patient personality substantially. Those personality changes are also linked to significantly better long-term improvements in mood.

The findings will be published in the December issue of [Archives of General Psychiatry](#), one of the JAMA/Archives journals.

"Our findings lead us to propose a new model of antidepressant mechanism," said Tony Z. Tang, adjunct professor of psychology in the Weinberg College of Arts and Sciences at Northwestern. "Our data suggests that modern antidepressants work partly by correcting key personality risk factors of depression."

Tang and colleagues studied the effects of the SSRI paroxetine (Paxil and Seroxat) in a placebo-controlled trial involving 240 adults with major depressive disorder. As typical in such clinical trials, patients taking paroxetine experienced moderately greater depression improvement than those receiving placebo. However, individuals taking paroxetine experienced a far greater decrease in neuroticism and an

increase in extraversion than those receiving placebo.

Neuroticism and extraversion are two fundamental personality dimensions extracted from empirical analyses of human languages. Neuroticism refers to a tendency to experience negative emotions and emotional instability, whereas extraversion refers not only to socially outgoing behavior but also to dominance and a tendency to experience positive emotions.

Several lines of recent research converged on the key importance of these personality dimensions: high neuroticism is a key risk factor of depression; twin studies also have found substantial overlap in the genes associated with high neuroticism and the genes associated with depression; and both neuroticism and extraversion are associated with the brain's serotonin system, which is targeted by SSRI antidepressants.

In this study, 120 participants were randomly assigned to take paroxetine. Another 60 were randomly assigned to undergo cognitive therapy. Their personalities and depressive symptoms were assessed before, during and after treatment. After treatment, the 69 paroxetine responders were followed for a year to assess depression relapse.

Patients taking paroxetine reported 6.8 times as much change on neuroticism and 3.5 times as much change on extraversion as placebo patients matched for depression improvement.

The findings provide evidence against the common assumption that personality changes during SSRI treatment occur only as a byproduct of alleviating depressive symptoms, the authors note. Several alternative explanations could be considered.

"One possibility is that the biochemical properties of SSRIs directly produce real personality change," the authors write. "Furthermore,

because neuroticism is an important risk factor that captures much of the genetic vulnerability for [major depressive disorder](#), change in neuroticism (and in neurobiological factors underlying neuroticism) might have contributed to depression improvement."

In this study, the advantage of paroxetine over placebo in changing personality appears far more drastic than its advantage over placebo in alleviating depression. SSRIs also can effectively treat many anxiety disorders and eating disorders, conditions for which high neuroticism and low extraversion may also be key risk factors. "Investigating how SSRIs affect neuroticism and extraversion may thus lead toward a more parsimonious understanding of the mechanisms of SSRIs," the authors conclude. SSRIs perhaps can be viewed as personality-normalizing agents, useful in treating many disorders associated with high neuroticism and low extraversion.

The paper is titled "[Personality](#) Change During [Depression](#) Treatment: A Placebo-Controlled Trial." In addition to Tang, other authors of the paper are Benjamin Schalet, of Northwestern; Robert J. DeRubeis and Jay Amsterdam, of the University of Pennsylvania; and Steven D. Hollon and Richard Shelton, of Vanderbilt University.

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Provided by Northwestern University ([news](#) : [web](#))

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