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Brain Treatments and Creativity

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A COLLEAGUE WROTE AN article on brain disease and creativity which brought up an interesting point that I had never considered seriously, namely, the potential side effect of reducing creativity in patients who we put on brain-active drugs. The article focused on people who suffered from mental illness (*Can J Psychiatry*. 2011;56;132) but there's no reason the point doesn't carry over to any brain disorder. While many of us are familiar with the eccentricities of friends or relatives with major mental illnesses, few of these people are very creative, simply because few people are very creative. Mental illness may be associated with creativity, particularly mania, when not out of control, but, as Sylvia Plath noted, "When you are insane, you are busy being insane all the time...When I was crazy, that's all I was." While I am not a psychiatrist, I have seen a large number of people with major psychiatric illnesses, and her personal observation rings true.

My patients form a highly select group. They all have movement disorders. This does not mean that the psychiatric patients with movement disorder side effects from their medications were poorly treated. Sometimes side effects are unavoidable. However, those patients I've seen haven't seemed particularly creative. Neuroleptics,



the antipsychotic drugs that cause movement disorders, tend to slow people down, both in their movements and in their thinking. In fact, in the "early" days of psychopharmacology, animal testing for anti-schizophrenic drugs focused on the drug's ability to slow the animals and make

them less inquisitive. Likewise the presumed benefit of frontal lobotomies was reduced agitation, often reduced movement in general, probably due largely to apathy. Dopamine receptor blockade, the cardinal neurotransmitter effect shared by all anti-psychotic drugs, probably produces apathy or at least some degree of indifference, in the patients I see. This is why they were used on political prisoners in the Soviet Union. In Parkinson's disease (PD), a dopamine depleting disorder, we think we see a reduction in "risk seeking behavior," that some have opined is related to the reduced dopamine. I doubt that apathy and creativity can coexist.

In her article, my friend cites medical conditions thought to be linked to creativity: hypomania and temporal lobe epilepsy. The link may be anecdotal (Dostoyevsky) or by clinical research (see articles by Norman Geschwind, MD), and those linked by popular opinion, particularly certain recreational drugs. (Think of Coleridge and his

opium haze-induced Xanadu, or Timothy Leary and his LSD "trips.") It seems unlikely to me, on the face of it, that drugs induce creativity, although I do admit it is plausible. More likely, drugs suppress anxiety, or increase activity by combatting depression, leading to increased and more considered expression of already-present thoughts, but this is certainly not an evidence-based opinion, and the bottom line is the bottom line. If drug X helps someone to write a great poem, create a dance, or solve some problem, then who can argue?

The interesting question that arises in the article is whether certain medications might squelch creativity. There was a famous British comedian who was well known to be at his creative peak as he became hypomanic. But his hypomania preceded severe mania which would require hospitalization. What if the only way to control his need for hospitalization was to use medication that suppressed these bouts of creativity? Of course, the patient is the one who would determine whether to be treated or not, but a case like that is extraordinary. In most cases one can only wonder if there may be a link between a "mental illness," either frank illness or a premonitory state, and creativity. The author of the article opines that, based on theories about creativity and the modes of action of certain medications, some patients, "creative types" (my quotes, not hers) should be treated with certain drugs, less likely

to inhibit the creative impulse, than others approved for a similar indication. I am skeptical. I am not persuaded that we have such knowledge to guide us. If these drugs have predictable effects on creativity I would wonder if there may be different drugs for mathematicians, painters, writers or musicians. Some creative artists are creative in several realms, but so far as I know, Mozart and Einstein were known for single field creativity, implying that there is not a single “creativity circuit” in the brain.

One of the problems that we have in studying the brain is our tendency to oversimplify. This has become a problem because oversimplification sometimes does, in fact, produce heuristically helpful models that translate into actually useful outcomes. It’s not always wrong. The insulin deficit in diabetes, or the dopamine deficiency problem in Parkinson’s disease are good examples. But giving insulin through contemporaneous blood sugar samples only helps glucose control, not the

other problems associated with diabetes. Increasing dopamine in the brain improves some movements in people with PD, but not all, and does nothing for any of the non-motor problems in that disorder. In addition, none of the ways we have of supplementing dopamine activity are helpful for the many disorders of dopamine deficiency that are not idiopathic PD. Furthermore, as I learned from a prominent neuropharmacologist, there are few, if any, neurological disorders that don’t, at some point, involve dopamine. In the brain, as most people know, everything is connected to everything else. There are no isolated physiological circuits and there are no isolated neurotransmitter circuits. Any perturbation is counterbalanced by some response somewhere. Blocking dopamine, increasing serotonin, reducing nicotine activity create imbalances in one (or more) places, counterbalanced by changes in other neurotransmitters somewhere else. I fully believe that in one hundred years our current most

sophisticated analyses of brain circuitry will seem closer to the four humors of the Greeks than 22nd century brain science. I am skeptical of theories that are not empiric when it comes to the brain because we know what we observe, but rarely why it occurs. We have too often been wrong, misled by our oversimplifications. Since there are usually several options for choosing psychiatric drugs, most of which work equally well, there is no harm in this theorizing, so long as we don’t take it too seriously. ❖

Author

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