
Pharmaceutical Management of Schizophrenia and Bipolar Disorder

In the summer of 2011, the premier journal for current scientific advances, *Nature*, published a news article titled, "Psychopharmacology in Crisis", which highlighted the paucity of funding for research in mental health. The article authored by a highly respected neuropharmacologist from Imperial College, London and a professor of psychiatry from Oxford University, cite serious cut backs in research funding by major drug companies associated with significant restructuring of their strategic research operations in mental health intervention. The *Nature* article echoes similar recent editorials in the neuroscientific literature and suggests that in this funding environment, many nonprofit and federal agencies are failing to take up the slack in supporting critically needed research activities, and warns that the reduction of research into mental illnesses is a withdrawal of hope for patients and their families who are left with current treatment options that have proven to be inadequate for many of those affected. An editorial in the *British Journal of Clinical Pharmacology* further outlines the perilous state of clinical psychopharmacology research and proposes that the failure to develop more effective drugs lies in our inability to understand the nature of the illnesses at a basic scientific level.

It is apparent that our current understanding and management, especially in the use of pharmaceutical intervention, in both bipolar and schizophrenic disorder is unsatisfactory. The tools at our disposal to treat these illnesses are sadly lacking to the degree that there are few available therapeutics to targeting neurochemical pathways outside of the dopamine/serotonin axis, which is the main mode of action for the anti-psychotic drugs. However the dopamine/serotonin pathways are considered by many not to represent the appropriate primary targets for therapeutics for schizophrenia and bipolar disorder.

Antipsychotics are essentially all that is currently available to the health practitioner in managing these illnesses but it is well known among the mental health community that these drugs are designed to treat only symptoms of these disorders and not the underlying causes.

Furthermore, the widespread use of anti-psychotic medication in mental illness has attracted much attention because of their non-specific mode of action along with the unwanted side-effects of these drugs. Patients taking this medication can appear as "semi-vegetative zombies". Also of significant concern is the association between the use of anti-psychotic drugs and a high rate of patient mortality. Over 1,800 deaths per year in the UK and in the US are reported and there are many litigation and personal-injury lawsuits that have resulted in criminal and civil settlements worth billions of dollars centered on the use of this class of drugs.

Looking to the future and the design of more appropriate pharmaceutical agents to manage schizophrenic and bipolar illness, the recent scientific literature offers promise in targeting alternate neurochemical pathways. Also, there is an emerging indication of programs in development at the corporate level to innovate in alternate neurochemical spaces. There does appear then to be progress towards a more effective treatment option, however there does need to be further evidence of significant scientific breakthrough in our understanding of the underlying neurobiology of schizophrenia and bipolar illness necessary for broadly effective pharmacological management without bestowing debilitating and life threatening side effects that are associated with currently available treatment options.