

Abstracts

Aripiprazole: Examining the Clinical Implications of D2 Affinity

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Abstract

Background. Aripiprazole has high binding affinity for the dopamine D2 receptor, which is thought to be responsible for the antipsychotic effect, though aripiprazole is not the most potent of the second-generation antipsychotics. Theoretically, aripiprazole could displace or outcompete more potent antipsychotics, prompting decreased antipsychotic effect. We describe a case of aripiprazole potentially worsening psychiatric symptoms by blocking paliperidone.

Case. Ms. A is a 43-year-old woman with schizophrenia, multiple inpatient hospitalizations, and a history of court-ordered treatment. She historically has had good response to oral and long-acting formulations of risperidone and paliperidone. Ms. A requested a medication change and was transitioned to aripiprazole lauroxil injection with plan for bimonthly administration. Approximately 1 month after receiving her aripiprazole lauroxil injection, Ms. A presented to our CPEP due to symptoms of psychosis and was admitted to our inpatient unit. She was restarted on oral paliperidone, titrated up to her previously effective dose, and was transitioned to paliperidone palmitate LAI. In contrast to prior admissions, she did not respond well to paliperidone and displayed continued and worsened psychosis.

Discussion. Prior studies have examined how adding aripiprazole to another, more potent D2 antagonist can cause a relapse in psychotic symptoms; however, few studies have investigated the inverse relationship or mechanism. Those that have proposed mechanisms typically refer to aripiprazole's partial agonist activity as the causative factor, rather than an impediment to antipsychotic binding which we have described. Prescribers should be aware of this potential interaction and carefully consider initiating long-acting injectable forms of aripiprazole to avoid this phenomenon.

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Analyzing Demographic Variabilities Associated With Age of Diagnosis of Schizophrenia Among Patients in Controlled Clinical Trials

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Abstract

Background. Prior literature and epidemiological data suggests that the age of diagnosis of schizophrenia (AOD) follows a bimodal and trimodal distribution for males and females, respectively. The studies used to generate these findings were often small and relied on self-reported patient data from a single geographic region in addition to other methodological limitations. We replicated these studies using a modern big data approach by combining raw data from large randomized controlled clinical trials.

Methods. Patient-level data from 15 similarly designed, randomized, double-blind, placebo-controlled, crossover studies with patients using paliperidone extended-release tablets, paliperidone palmitate 1-month, and paliperidone palmitate 3-month, were obtained through the Yale Open Data Access Initiative (YODA). Descriptive statistics and histograms were calculated for continuous variables. A multivariable linear regression was performed with AOD as the outcome variable. Race and sex were used as predictor variables.

Results. Our final analysis included 7881 patients consisting of male (n=4962) and female (n=2919) patients among different racial demographics. Race was consolidated into the following groups: Asian (n=949), Black (n=1692), Hispanic (n=3), Southeast Asian (n=17), White (n=4769), and other (n=343) based on patient self-identification on the YODA datasets. A chi-square test revealed that there is a statistically significant association between patient sex and AOD ($\chi^2=295.61$, $df=68$, $p < 0.0001$). By proxy, this likely means that sex affects age of onset (AOS) as well. Our linear regression output with sex as a predictor of AOD revealed that only the male variable was found to have a statistically significant relationship ($p < 0.0001$) with AOD and resulted in a lower AOD. Histograms generated with the frequency of occurrences against AOD for both male and female patients appeared to be unimodally distributed and skewed right. However, the AOD for female and male patients were found to be 28.79 and 25.44 years old, respectively. This demonstrates that while both male and female AOD are distributed unimodally, there are slight differences in their distributions.

Conclusion. Our analysis differs from previous studies and finds that AOD for male and female patients are seen in a unimodal distribution as compared to previous literature that shows a bimodal and trimodal distribution. Our findings not only call for a re-evaluation of previous epidemiological understandings of AOD but may support future efforts in understanding the origins and typical clinical presentations of patients with newly developed symptomatology of schizophrenia as well as support clinicians' perspectives as part of clarifying differential diagnoses. Further studies can also continue to evaluate possible correlations among different races.

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Thanatotic Infestation: Ekbom's Syndrome as an Exordium to Cotard's Delusion

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Abstract

Introduction. Ekbom's delusion as a prelude to Cotard's syndrome, has not heretofore been described.

Methods. Case study: A 45-year-old woman with a past diagnosis of bipolar disorder with psychotic features was admitted, having been up all night conversing with spirits, proclaiming that she had made a deal with Satan. Convinced that her grandmother was possessed by the devil, she smashed her grandmother's head with a two-by-four. **Results:** Mental Status Examination: self conversing with her eyes darting around the room. Poor hygiene. Behavior: guarded and withdrawn. Oriented x2. Speech: hyperverbal. Insight and judgment: poor. Mood: hostile, aggressive, and angry. Thought process disorganized, incongruent, and tangentiality. She was convinced she was infested with little black bugs crawling around her insides which had been placed there by the devil. After two days of

olanzapine she reported the bugs were no longer present, but rather that she herself was dead and that her organs were decomposing, which persisted through the remainder of the hospitalization.

Discussion. Neuroimaging abnormalities in Ekbom's syndrome involve the striatum, basal ganglia (putamen and caudate nucleus), insular and cingulate cortices, cortex (prefrontal, right parietal, and temporal lobes), right lingual and orbitofrontal gyri, and thalamus. In Cotard's syndrome, abnormalities have been identified in the striatum, frontal and temporal lobes, and right-sided and bilateral hemispheres. An overlap between the delusions exists in the striatum, inferior parietal, and temporal lobes. A single lesion in the nondominant inferior parietal lobe may cause both syndromes, due to its substantial interconnection with the temporo-limbic areas. Since the parietal lobe is also involved in somatosensory processing, peradventure distorted sensory perception with associated sensation of formication may have been the nidus for the delusional infestation as well as a nidus for the perception of thanatos habitus. Such misperception may have then been amplified into a delusion because of a hyperconnection between the parietal lobe and the limbic system. This may represent a variant of the two-factor hypothesis of delusions whereby a distorted sensory perception is then misrepresented in a delusion. Dysfunction of the right hemisphere, which normally acts to censor the left, allows the delusion to manifest. A single lesion of the inferior parietal lobule may be sufficient for both sensory distortions and loss of inhibition of delusional interpretation of distorted sensation by the frontal lobe, yclept the sensorialist hypothesis.

Conclusion. In those with monothematic delusions, the search for transient fluctuation in delusional states may be revealing.

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Psychomotor Side Effects of Carbamazepine in an Elderly Patient With Bipolar Disorder and Cognitive Impairment

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Abstract

Introduction. The management of elderly bipolar patients can become very complex due to higher prevalence of medical comorbidities and sensitivity to treatment-related adverse effects. One of the antiepileptic drugs used for their treatment, carbamazepine, has had a number of cognitive and psychomotor effects linked to it: deterioration in measures of information processing speed, and attention and faster motor skills after discontinuation, among others. The literature concerning them is quite sparse.

Methodology. We report the case of a 75-year-old woman with bipolar disorder and unspecified cognitive impairment who was brought to the emergency department by her family due to global functional decline dating 3 weeks back.

Results. The patient had been diagnosed and in treatment with bipolar disorder for 40 years. About 2 months before the current