Familiarity with Psychiatric Pharmacogenomic Testing in Physicians and Advanced Practice Providers: Educational Opportunities

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Introduction. Pharmacogenomic (PGx) testing identifies individual genetic variation that may inform medication treatment. Lack of awareness and education may be barriers to implementing routine PGx testing. To characterize current PGx testing utilization and educational needs we conducted a survey of various provider types.

Methods. Healthcare providers in the primary care setting were targeted between November 2022 and February 2023 via the Medscape Members paid market research program. The survey included 5 demographic, 5 multiple-choice, and 4 multi-component five-point Likert scale questions to assess PGx sentiments, use, and education in mental health (e.g., depression) and primary care (e.g., cardiovascular disease) conditions. Responses were descriptively compared.

Results. Of 305 U.S. provider respondents [40% nurse practitioners (NPs), 33% frontline MDs/DOs, 3% physician assistants (PAs), 24% other], most indicated that they "don't use" (44-49%) or "have never heard of" (19-20%) PGx testing for mental health conditions. The most helpful sources to learn about PGx testing were accredited CE/CME activities (55-61%) and peer-reviewed publications (57-59%). Most NPs/PAs preferred webinars (62%) or online learning portal (57%) formats. MDs/DOs had no preference for webinars or learning portals over conferences, written materials, or academic presentations (45-47%). NPs/PAs were more interested in learning about PGx testing than MDs/DOs (4.29/5 vs. 3.96/5 average score).

Conclusions. These data reveal awareness level and desired learning opportunities for PGx testing between types of healthcare providers. Education should be tailored to meet providers' preferred learning formats and information sources, such as offering CE/CME through an online learning portal.

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Ketamine and Esketamine Use for Mood Disorders with Psychosis: A Systematic Review of Dissociative and Psychotic Symptoms

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Introduction. Ketamine is used off-label for suicidality and mood disorders, whereas esketamine is FDA-approved for treatment-resistant depression in adults. However, many of these studies have excluded patients with a history of or currently presenting with psychosis. A significant number of patients who have primary mood disorders with psychotic features need novel psychopharmacological interventions. We conduct a systematic review of ketamine and esketamine usage in patients with treatment-resistant mood disorders (either depression or bipolar) with psychotic features to assess the safety and tolerability of these medications in this population.

Methods. PubMed, Google Scholar, and EBSCOHost databases were searched systematically using a curated search strategy involving keywords and subheadings. A total of 199 abstracts were reviewed after duplicates and 25 full text articles were screened. All selected publications were reviewed independently by three authors. We only included non-review articles in patients with primary mood disorder presenting with psychotic features measuring dissociative and psychotic outcomes with ketamine or esketamine administration.

Results. A total of 12 articles were included: nine articles reported case reports/series and three reported observational studies. All combined, there was a total of 64 patients with depression and psychotic features and 19 adults with bipolar and psychotic features. The majority of case reports involved female adults and there was one pediatric patient of unknown sex. Either ketamine or esketamine was administered at a dose of 0.5 mg/kg for all patients, either intravenously, subcutaneously, or orally. Six articles mentioned dissociative symptoms, but only two used a validated scale, Clinician-Administered Dissociative States Scale (CADSS), to measure symptoms. While six articles reported a transient increase of dissociation during and within 2 hours of the medication infusion, no article reported sub-acute or chronic worsening of dissociative symptoms. Furthermore, one article reported a significant decrease in baseline CADSS over four weeks. 12 articles mentioned psychotic symptoms, but only three used a validated scale, Brief Psychiatric Rating Scale (BPRS), to measure symptoms. Every article reported that psychotic symptoms did not worsen. Furthermore, one article reported a significant decrease in baseline BPRS over four weeks and eight articles reported resolution of psychotic symptoms.

Conclusion. Ketamine and esketamine are being used for both depression and bipolar with psychotic features by some clinicians when other treatment modalities are not successful. This has

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