underwent a 4-day intervention (TCT) which consisted of one night of sleep deprivation followed by three days of sleep phase advancement and daily bright light therapy. Primary outcomes were feasibility and depression, as measured by Hamilton Depression Scale-17 (HAMD-17) scores. Secondary outcomes included severity of illness, anxiety, self-harm, insomnia, and suicidality.

RESULTS: Twenty-nine (94%) adolescents completed the TCT protocol. Twenty-six (84%) of the 31 enrolled patients experienced a reduction in depressive symptoms of at least 50% from baseline; 24 (77%) achieved remission, defined as a HAMD-17 score less than 8. Secondary outcomes showed significant improvement following the 4-day TCT intervention; improvement was sustained through the 7–10 day and 1-month follow-up periods.

CONCLUSION: This pilot study determined TCT to be a feasible, safe, accelerated, and promising adjunctive treatment for acute depression in the adolescent population. This study has been submitted for publication and is currently under review.

21
Patient Preferences Concerning the Efficacy and Side-effect Profile of Schizophrenia Medication: A Survey of Patients Living with Schizophrenia

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ABSTRACT: Study objective: Patient-reported outcomes and preferences rely on reports of the status of a patient's health condition that comes directly from the patient, without interpretation or qualification by clinicians or investigators. Patient-reported outcomes and preferences have become an accepted approach in drug development. As part of this effort, we assessed the relative importance to patients with schizophrenia of trying a new antipsychotic that might improve symptoms in the context of common antipsychotic side effects, especially weight gain. Information from surveys such as this one can provide pilot guidance about what might be acceptable versus unacceptable trade-offs when considering new therapies for schizophrenia.

METHODS: We prospectively administered a cross-sectional survey to 250 patients with clinical diagnoses of schizophrenia or schizoaffective disorder, aged ≥18 years, from five US outpatient community clinics, regarding the importance of efficacy and side effects on treatment decisions involving medications. Sixty-four percent (n = 160) of the patients were male; mean age was 43 years (range: 18–72 years); mean weight was 91 kg (range: 49–182 kg); and mean body mass index was 30.3 kg/m^2 (range: 15.3–63.3 kg/m^2).

RESULTS: Patients rated both efficacy and side effects as important attributes of medication for schizophrenia treatment, with 88.5% identifying the ability to think more clearly as an important property of their medication. Patients identified efficacy and side effects as important drivers to take their prescribed medicine (endorsed as very or most important by 94.3% and 84.0% of patients, respectively). Patients identified weight gain, physical restlessness and somnolence as significant side effects of current treatments for schizophrenia (very/most important by 61.5%, 60.4%, and 58.9%, respectively). When asked about willingness to change antipsychotics, anticipated weight gain had a strong negative influence on willingness to try a new antipsychotic, with 44.9% of patients declining to try a medication that would lead to a weight gain of 3–5 kg, and 70.8% of patients declining for an anticipated weight gain of 5–9 kg.

CONCLUSION: Patients living with schizophrenia or schizoaffective disorder are influenced by many factors when considering whether to take their prescribed medication, including efficacy and side effects. It is important for clinicians to assess patient-specific concerns and develop a comprehensive treatment plan to maximize adherence to prescribed therapies.
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Using Light to Unveil Depression: The Role of Optogenetics

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ABSTRACT: Introduction: Major depressive disorder (MDD) is a highly prevalent and often debilitating condition with a vast impact on modern societies worldwide. Although it interferes significantly with functioning, MDD is frequently unresponsive to conventional treatment approaches and pharmacotherapy failure has been reported in approximately one third of patients. Current knowledge of the exact underlying disease mechanisms is insufficient, and may thus largely contribute to such therapeutic limitations. Optogenetics, a novel study field employing the expression of genetically-encodable light-sensitive proteins in specific cell types, circumvents the limitations of other forms of neuromodulation and enables temporally precise, bidirectional control of cellular activity in well-defined neuronal populations. This strategy has been used successfully to dissect neural pathways and circuitries involved in complex mental diseases such as MDD.

METHODS: A systematic literature search was conducted using the terms "Optogenetics", "Depression" and "Major depressive disorder" on the databases MEDLINE, LILACS, SciELO, Pubmed and BIREME. Inclusion criteria were adopted: articles published in the English language from 1971 (description of bacteriorhodopsin as a light-activated regulator of transmembrane ion flow) to 2017 and articles based on experimental studies were selected.

RESULTS: By using highly validated animal models based on the exposure of phenotypically susceptible rodents to different forms of chronic stress, researchers have been able to reproduce the hallmark symptoms of Depression as well as the histopathological abnormalities found in human brain specimens post-mortem. Several brain regions and neuron populations involved in MDD have been identified by use of a variety of molecular resources including viral vectors, genetically engineered animals, multiple promoters and bacterial opsins. Important areas of dysfunction underlying depression including the medial prefrontal cortex, the ventral tegmental area, the nucleus accumbens, the hippocampus and the basolateral amygdala have been investigated by using optogenetic neuromodulation, yielding new insights into the pathological processes underlying MDD. Researchers have been able to pinpoint affected circuitries and employ time-precise light modulation to successfully revert symptoms of MDD, restoring normal function. It is important to highlight that although promising, studies using optogenetics are controversial, largely due to the variable set tools, models and tests employed in research.

CONCLUSION: Light modulation using optogenetics has greatly aided to establish accurate models to unveil the neurobiological basis of Depression. Further research will continue to help build more complete pathophysiological constructs and pave the way for new treatment strategies.

Keywords: Optogenetics, Neuromodulation, Depression, Major Depressive Disorder.

23
"To die, to sleep – to sleep, perchance to dream..." Inhibition of Nightmares with Pramipexole: A Possible Treatment for PTSD

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ABSTRACT: Introduction: The association of sleep disorders and post-traumatic stress disorder (PTSD) is almost universal. Nightmares are not only one of the most commonly associated but also featured as a diagnostic criterion for PTSD. PTSD-related nightmares are particularly distressing, may impair functioning and increase risk of suicide. No specific pharmacologic agent has been demonstrated to impair dreaming. Inhibition of PTSD-related nightmares with pramipexole has not heretofore been described. Such a case is presented.

METHODS: Case study - This 60 year-old male with PTSD and trauma-related nightmares upon introduction of pramipexole 0.5 mg PO qHS for Restless Leg Syndrome (RLS) had total elimination of dreams, which recurred upon discontinuation of this agent as a result of insomnia and increased anxiety. A lower dose of 0.375 mg qHS provided optimal RLS-symptom control and overall improved tolerance despite nightmare recurrence.

RESULTS: Abnormalities on Neurological examination: Recent recall: 2 of 4 objects without improvement with reinforcement. Able to spell the word "world" forwards but not backwards. Abstract thought impaired. Chemosensory testing: Anosmia and normogeusia. Motor: Drift: mild right pronator drift with right cerebellar spooning and right abductor digiti minimi sign. Reflexes: 3+ brachioradialis and biceps bilaterally,

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