Lithium is Clearly Underutilized in Child Psychiatry

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To the Editor: Frederick Goodwin, an influential figure in bipolar mood disorder, famously said, if you can't, or you won't use lithium, get out from the business of treating bipolar disorders! Lithium remains the gold standard treatment of bipolar mood disorder. But, sorely, it is underutilized in Child/Adolescent Psychiatry, despite Food and Drug Administration's approval for age 12 and above. Recently, Findling *et al*.[1] conducted the first randomized controlled trial for lithium in juvenile bipolar mood disorders ages 7–17 years where lithium was superior to placebo, well-tolerated, and, most importantly, devoid of the cardiometabolic syndrome inherent to most of the atypical antipsychotics that are currently the state-of-the-art treatment modality in most algorithms. Lithium was also shown to have a large effect size of 1.06 in an open treatment study by Kowatch *et al*.[2] Geller *et al*.[3] reported positive effects with reference to anti-manic efficacy in adolescents with bipolar and substance use disorders in a 6-week placebo-controlled double-blind study. In a meta-analysis by Liu *et al*.,[4] a number of open-label trials demonstrated the average efficacy of 40%. In my opinion, lithium has fallen into disfavor as a viable treatment option for juvenile bipolar disorders for a couple of reasons. Lithium is notorious to have a narrow therapeutic index, and, hence toxicity is a definitive risk, notably in hot climates in countries like this, where kids can be readily dehydrated. I'd argue that with close monitoring of serum levels every 3 months as per British National Formulary, given higher metabolic rates and renal clearance resulting in a half-life of <18 h versus 24 h in adults, and, that lithium is excreted in sweat too, all this would translate clinically into surprisingly higher dosing than in adult counterparts to achieve therapeutic effects, and, ostensibly obviates undue concerns of toxicity in pediatric population. Another major concern is the dread of mental dullness effectuated by lithium in children where anti-cognitive effects would be counterproductive regarding academic demands. Heaps of data are pouring into neuroscience literature, all converging to demonstrate rather procognitive effects of lithium. These include, inter alia, increasing of gray matter volume, promoting of hippocampal neurogenesis, increasing of N-acetyl aspartate, a putative marker of neuronal viability, increasing brain-derived neutropic factor and anti-apoptotic Bcl-2, inhibition of pro-apoptotic protein P53 and β catenin, and, inhibition of glycogen synthase kinase-3β. For these properties, lithium has been tried in major neurodegenerative disorders like amyotrophic lateral sclerosis, although it was futile.

Uses of lithium in psychiatry are protean apart from bipolar mood disorders. Suffice to mention, anti-impulsivity, anti-suicidality, anti-aggressivity, dual diagnosis, schizo-affective, augmentation in unipolar depression, cyclothymia, cycloid psychosis, Klein–Levine syndrome, borderline personality, clozapine-induced neutropenia, augmentation in schizophrenia, psychogenic polydipsia, just to name few.

It behoves child and adolescent psychiatrists not to deprive this population from a "real" mood-stabilizer that has withstood test of time for decades now, in the battle against the naturally more virulent juvenile bipolar disorders which take its toll relentlessly over lives of those afflicted kids and also their families, solely, for ill-founded fears in the eyes of prescribers.

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Conflicts of interest

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