

**Letter**

Melatonin “Pearls” in Psychiatry

Ahmed Naguy¹, Pavly Samir²¹Al-Manara CAP Centre, Kuwait Centre for Mental Health (KCMH), Jamal Abdul-Nassir St, Shuwaikh, State of Kuwait²Ibrahim Bin Hamad Obaidullah Hospital, Ras Al-Khaimah, United Arab of Emirates**Email address:**

ahmednagy@hotmail.co.uk (A. Naguy)

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Abstract: Melatonin use in clinical psychiatry currently is rife. Efficacy coupled with safety and lack of abuse potential render melatonin an attractive therapeutic option. Data accrues speaking to the idea of a pluripotent molecule beyond a sleep-aid. Here, authors would shed some light on melatonin use in psychiatry.

Keywords: Melatonin, ASD, ADHD, Bipolar, Schizophrenia, AD, TD, Metabolic Syndrome

1. Introduction

Melatonin, N-acetyl 5-Methoxytryptamine is a natureceutical whose use in clinical psychiatric practice currently is rife. Efficacy coupled with safety and lack of abuse potential render melatonin an appealing addition to psychopharmacologic armamentarium. Heaps of data from neuroscience accrue speaking to the idea of a pluripotent molecule beyond a sleep-aid. Here, we would outline our state-of-the-art knowledge about melatonin use in psychiatry.

2. Melatonin in Sleep Disorders

Melatonin, due to its chronobiotic action, has been successfully used to address insomnia and circadian rhythm disorders including paediatric population [1]. The sleep-promoting and sleep/wake rhythm regulating effects of melatonin are attributed to its action on MT(1) and MT(2) melatonin receptors present in the suprachiasmatic nucleus (SCN) of the hypothalamus.

3. Melatonin in Neurodevelopmental Disorders

Melatonin has shown to reduce sleep latency and increase total sleep duration in autistic (ASD) population. Wright [2] et al. have demonstrated additional benefits in ASD

including reduced disruptive behaviour and self-absorption and improved anxiety and communication. Malow [3] et al. have shown reduced stereotypies, ADHD-like behaviour and parental stress. Melatonin has also been used to tackle insomnia associated with attention-deficit/hyperactivity disorder (ADHD). However, Van der Heijden [4] et al. found no improved behavioural or cognitive ramifications. Also, Niederhofer et al. conducted an RCT showing melatonin facilitated sleep in intellectual disability (ID) population [5]. Since, neurodisabilities have commonly comorbid epilepsy, Jain [6] et al. have examined literature to assess melatonin effect on seizure control. Due to paucity of data, no firm conclusions were drawn but it was obvious that there was no marked overall effects on seizures.

4. Melatonin in Bipolar Mood Disorders

By securing sleep and rectifying circadian rhythms disturbance in bipolarity, melatonin might be a game-changer in treatment of mood disorders [7]. Bersani [8] et al. reported 11 manic patients with treatment-resistant insomnia that responded favourably to add-on melatonin with resultant parallel improvement in manic symptomatology. Robertson [9] et al. have reported on a 10-year-old boy with bipolar disorder diagnosed at age of 5, lithium, carbamazepine and valproate were either ineffective or intolerable. A trial of melatonin led to a rapid relief of insomnia and aborted a manic episode. He was kept on melatonin and alprazolam for 15 months in remission.

5. Melatonin in Schizophrenia

Andreson [10] et al. have shown that melatonin might augment antipsychotic efficacy by anti-inflammatory and anti-oxidative actions. Moreover, by impacting TRYCATS might impact cortex associated cognition, amygdala associated affect, and, striatal motivational processing. Morera-Fumero [11] et al. revised role of melatonin in schizophrenia both as a biologic marker and as a treatment adjunct.

6. Melatonin for Alzheimer’s Disease (AD)

Cardinali [12] et al. has shown that melatonin replacement might be effective to treat sundowning and other sleep wake disorders in AD patients. The antioxidant, mitochondrial and anti-amyloidogenic effects of melatonin indicate its potentiality to interfere with the onset of the disease. This is of particularly importance in mild cognitive impairment. Melatonin has shown to be neuro-protective too. Of related interest, Chen [13] et al. conducted a meta-analysis of 4 RCTs and demonstrated that melatonin supplementation had a significant preventive effects in decreasing the incidence of deliria in elderly patients in medical wards.

7. Melatonin for Tardive Dyskinesia (TD)

Shamir [14] et al. have conducted a double-blind, placebo-controlled, cross-over 6-week study in 22 schizophrenic patients and using AIMS, melatonin was effective for TD probably due to anti-oxidant properties akin to similar use of vitamin E, given that melatonin is 6-10 times more potent.

8. Melatonin for Metabolic Syndrome (MetS)

Romo-Nava [15] et al. have conducted an 8-week, randomized, double-blind, parallel-group, placebo-controlled clinical trial of 44 SGA-treated patients where melatonin attenuated antipsychotic-induced MetS. This was best demonstrated for effects on fat mass and diastolic BP in the bipolar group and not schizophrenic group. These results were echoed in another RCT by Goyal [16] et al. Melatonin has also been shown to be cardio-protective. Given the rampant use of AAPs in clinical practice with notoriety for Met S, add-on melatonin remains a viable option to combat cardio-metabolic syndrome. This is especially crucial to CAP population who are at heightened risk by virtue of age.

9. Conclusion

The aforementioned list is by no means all-inclusive. As data accrues, therapeutic potential of melatonin expands.

Definitely, large, well-conducted trials are sorely needed to define the real place of melatonin in psychiatric pharmacopeia.

10. Disclosures

Author declares no competing conflicts of interest, nor financial affiliations, or, industry-sponsored research.

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