
OLANZAPINE, CORRECTION OF MELATONIN SUPPRESSION, AND METABOLIC INDICES

A. Tapp¹, A. Wood¹, N. Kilzieh¹, P. Sylvers¹, D.D. Rasmussen², M. Raskind³

¹Mental Health Research, VA Puget Sound Health Care System, Tacoma, USA ; ²Research, VA Puget Sound Health Care System, Seattle, USA

; ³Research and Development, VA Puget Sound Health Care System, Seattle, USA

OBJECTIVE: Animal research suggests that weight gain may be caused by olanzapine-induced melatonin suppression. We conducted a pilot study of psychiatric patients treated with olanzapine to examine if melatonin was suppressed and if so the dose needed to replace this deficit. The relationship between melatonin and metabolic indices was also examined.

METHOD: Ten patients with schizophrenia (N=3), schizoaffective disorder (N=3), or bipolar disorder (N=4) completed the study. All patients were male, average age 50.6 years. Patients were treated with olanzapine for 5 weeks, then randomized to either 0.3mg (N=4) or 3mg (N=6) of melatonin supplementation in addition to the olanzapine for another 6 weeks. We obtained baseline, week-6, and week-12 measures of the major metabolite of melatonin in the urine, 6-Sulfatoxymelatonin (aMT6s) adjusted for creatinine excretion. We measure weekly weight, glycemia, cholesterol, and triglycerides.

RESULT: Olanzapine treatment was associated with a trend toward decreases in melatonin from baseline to week-6 ($p=.14$). Analysis of a sub-sample of patients diagnosed with schizoaffective or bipolar disorder showed significant decreases from baseline to week-6 ($p=.02$). Both supplementation with melatonin by 0.3mg and 3mg increased urinary melatonin levels from week-6 to week-12 ($p=.12$ and $p=.02$ respectively). Total cholesterol increased initially but demonstrated a trend for decrease when melatonin was supplemented ($p=.10$).

CONCLUSION: Olanzapine appears to be related to melatonin suppression. Melatonin supplementation reverses this suppression and may have the potential to reverse metabolic effects associated with olanzapine. Further studies are needed to examine the metabolic effects of olanzapine with melatonin.