

Abstract

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Treatment of persistent sleep-wake schedule disorders in adolescents with methylcobalamin (vitamin B12).

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BACKGROUND: Two adolescent patients suffering from persistent sleep-wake schedule disorders appear to have responded to treatment with vitamin B12 (methylcobalamin). A 15-year-old girl with delayed sleep phase syndrome (DSPS) and a 17-year-old boy with hypernycthemeral syndrome complained of not being able to attend school despite many trials of medication.

METHODS AND RESULTS: The improvement of the sleep-wake rhythm disorders appeared immediately after the administration of high doses (3,000 micrograms/day) of methylcobalamin. Neither patient showed any laboratory or clinical evidence of vitamin B12 deficiency or hypothyroidism (which can cause B12 deficiency). Serum concentrations of vitamin B12 during treatment were in the high range of normal or above normal. The duration of the sleep period of the DSPS patient decreased gradually from 10 hours to 7 hours, and the time of sleep onset advanced from 2 a.m. to midnight. The period of the sleep-wake cycle of the hypernycthemeral patient was 24.6 hours before treatment and 24.0 hours after treatment.

CONCLUSION: The relationship between the circadian basis of these disorders and vitamin B12 and its metabolites is discussed.

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