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Fibromyalgia--a syndrome associated with decreased nocturnal melatonin secretion.

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+ Author information**Abstract**

OBJECTIVE: Most patients with fibromyalgic syndrome (FMS) complain of sleep disturbances, fatigue, and pain. These symptoms might be a consequence of changed melatonin (MT) secretion, since MT is known to have sleep promoting properties. Moreover, serum concentrations of two MT precursors (tryptophan and serotonin)--affecting both sleep and pain perception--appear to be low in patients with FMS. Therefore, the objective of this investigation was to study whether serum MT (s-MT) level is also low in these patients.

DESIGN: Eight patients with FMS and 8 healthy sex-, BMI-, and age-matched controls were included in the study. s-MT concentrations were determined every second hour between 1800 and 0800 h. Urine was collected between 2200 and 0700 h for determination of urinary MT excretion. To evaluate total MT secretion between 1800 and 0800 h and MT secretion during the hours of darkness (between 23 and 07 h) individual MT areas under the curve (AUC) were calculated and expressed as group means.

RESULTS: The FMS patients had a 31% lower MT secretion than healthy subjects during the hours of darkness (MT AUC 2300-0700 h (mean +/- SEM): 1.70 +/- 0.17 vs 2.48 +/- 0.38 nmol/l; P < 0.05). Also the s-MT peak value was significantly lower in the patient group: 0.28 +/- 0.03 vs 0.44 +/- 0.06 nmol/l; P < 0.05).

CONCLUSION: Patients with fibromyalgic syndrome have a lower melatonin secretion during the hours of darkness than healthy subjects. This may contribute to impaired sleep at night, fatigue during the day, and changed pain perception.

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