



Jet Lag, Heart Rate and Melatonin

Jet Lag, Kalp Hızı ve Melatonin

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Dear Editor,

Jet lag, also called desynchronization and flight fatigue, is caused by flying in an airplane and crossing one or more time zones, which can disrupt the body's sleep and circadian rhythms⁽¹⁾. Jet travel across time zones, is a geographical region which has the same time everywhere within it, may make it difficult for you to fall asleep, stay asleep, or stay awake during the day. The effects of jet lag usually are greater if you are going from west to east than from east to west. The symptoms of jet lag including flight fatigue, sleep disturbance, anxiety, dehydration, headache, irritability, constipation, diarrhea, confusion, loss of appetite, nausea, sweating, coordination problems, dizziness, memory loss and heart beat irregularities may take one to several days to go away^(2,3). Distortions of the circadian rhythm structure of the heart rate and parasympathetic nerve activity after an eastward transmeridian flight were studied by Tateishi et al.⁽³⁾. Heart rate variability was determined by power spectrum analysis, and high frequency power (0.15-0.4 Hz) was used as the index of parasympathetic tone. They found a structural disturbance of the circadian rhythm of the heart rate and parasympathetic nerve activity. Also, Chang et al.⁽⁴⁾ reported a case of Takotsubo cardiomyopathy, is characterized by transient and severe left ventricular apical ballooning, and basal hyperkinesias in the acute stage, in a Taiwanese woman associated with jet lag. Melatonin (5-methoxy-N-acetyltryptamine) is a neurohormone secreted by the pineal gland in the brain. It regulates other hormones and several physiological functions such as cardiac rhythms, heart rate and arterial blood pressure⁽⁵⁾. It also maintains the body's circadian rhythm. Light has an inhibitory effect on the pineal melatonin secretion. Melatonin may help on the treatment of different cardiovascular conditions such as coronary artery disease, hypertension and heart failure⁽⁶⁻⁸⁾. It has also been shown to modulate vascular smooth muscle tone and to induce hemodynamic effects^(9,10).

Melatonin may regulate the cycle of sleeping, waking and heart rate alterations. Taking melatonin may help reset sleep and wake cycle⁽¹¹⁾. The Cochrane review concludes that 2-5 mg melatonin taken at bedtime after arrival is effective and may be worth repeating for the next two to four days, together with the non-drug measures already mentioned⁽¹²⁾. But people who have not had jet lag on a previous trip may well never need it.

In this brief review, it has been summarized the data describing the protective effects of the melatonin on the jet lag. In view of the large amount of positive data that has already accumulated, additional studies in this field should be of high priority.

Key Words: Jet lag; heart rate; melatonin

Anahtar Kelimeler: Jet lag; kalp hızı; melatonin

CONFLICT of INTEREST

The authors reported no conflict of interest related to this article.

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