Melatonin, a hormone segregated by human body, regulates sleep better than somniferous

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Melatonin, a natural hormone segregated by the own human body, is an excellent sleep regulator expected to replace somniferous, which are much more aggressive, to correct the sleep/wakefulness pace when human biological clock becomes altered.

Those are the conclusions of a research work carried out by Darío Acuña-Castroviejo and Germaine Escames, professors of the Institute of Biotechnology (Biomedical Research Centre of the University of Granada), who have been carrying out a complete analysis of the properties of this natural hormone segregated by the pineal gland for years.

Melatonin (frequently called the 'hormone of darkness', because the organism produces it at night) is currently being used by the pharmaceutical industry to design derivative synthetic medicines, a very interesting therapeutic tool for the treatment of sleep alterations. Not in vain, the European Medicines Agency (EMEA) authorized in 2007 the use of melatonin for this type of therapies, after years of debate about the convenience of this measure.

Taking it at specific hours

The researchers of the University of Granada have stated that melatonin "is a very effective chronobiotic in the treatment of chronobiological alterations of the cycle sleep/wakefulness", although its administration

"must take place at certain hours of the day, inducing a phase advance or delay as convenient". Therefore, the scientists point out that the "lack of effect of melatonin is related, most of the times, to an inadequate administration".

The authors of this work, published in the *Revista de Neurología* (2009), state that endogenous melatonin (this is, that segregated by the human organism) "plays an important role in the circadian regulation of sleep", whereas exogenous melatonin (administered as a medicine) "has an influence on sleep aspects such as latency and quality".

Actually, the ability of melatonin to readapt the biological clock has been studied in blind individuals, as they cannot make use of the information of the photoperiod to activate the endogenous pacemaker segregated by melatonin at night. The scientists have pointed out that the administration of melatonin every 24 hours (1-10 mg/a day) re-establishes the pace in these persons, including the sleep/wakefulness, synchronizing them to a period of 24 hours.

The use of melatonin to regulate sleep is not the only work carried out at the Institute of Biotechnology of the University of Granada. In the last years, professors Acuña and Escames have proved that this substance is also useful to slow down cell ageing, to treat diseases such as Parkinson and to slow down cell death caused by serious infectious processes that affect the entire organism technically known as sepsis. Exactly, they are working at present on a clinical test in Phase II to assess the therapeutic of melatonin in the septic shock on patients, funded by the Health Institute Carlos III.

Source: University of Granada