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Melatonin

General:

Chemistry/pharmacology: The amino acid N-acetyl 5-methoxytryptamine (=melatonin) is formed from tryptophan, serotonin and B-vitamins in the pinealocytes of the pineal gland (epiphysis). Darkness stimulates the synthesis and release of melatonin, brightness causes inhibition (via retina). Shortly after it becomes dark, the melatonin level in blood rises and reaches a maximum peak, between 2 and 4 a.m. in the morning. Peaks are the highest in small children from 1 to 3 years of age, then they decrease during life. Melatonin has an antioxidative effect in high (pharmacological) concentrations.

Pharmacokinetics: Melatonin is quickly absorbed. Maximum plasma levels are reached after 45-60 min. The biological availability varies significantly. Oral doses of 1 to 5 mg cause plasma levels with concentrations of 100 to 1000-times of the physiological levels during the night. Melatonin is mainly biotransformed in the liver; the metabolites (sulfates, glucuronides) are secreted in urine. The elimination half-life is 45 minutes.

Melatonin has sleep-inducing effects. Other effects of melatonin: It is discussed that sexual maturation and puberty is connected to the gradual decrease of melatonin secretion during childhood. On the other hand significantly high melatonin levels were found in patients with hypothalamic hypogonadism. Melatonin may also have a direct influence on endocrine function of the ovaries. Antioxidative effects can be seen in very high concentrations.

Indication:	Sleeping disturbances
Material:	1 ml serum, **Frozen**
TAT:	7-10 days*
Method:	LCMS
Units:	
Ref.- range:	see report
Note:	at night the level is usually higher than 30.0 pg/ml, in the afternoon no melatonin is detected

For complete list of laboratory test offered at Freiburg Medical Laboratory, please visit http://www.fml-dubai.com/parameter-listings/

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