

## **Overview**

Narcolepsy is a chronic neurological disorder characterized by excessive sleepiness presenting after puberty. Symptoms may include cataplexy, sleep paralysis, and hypnagogic hallucinations. Cataplexy is the momentary weakness sometimes noted in periods of high emotion. Narcoleptic dogs when excited may suddenly lie limp and motionless for a short time. Sleep paralysis is a sensation of paralysis felt by patients when just waking-up or just falling asleep. It can sometimes last for a minute or two and be somewhat frightening. Finally, hypnagogic hallucinations are vivid life-like dreams again at sleep onset or when awakenings. All of these symptoms are associated with early onset rapid eye movement (REM) sleep in patients with narcolepsy.

## **Causes**

The development of narcolepsy appears to involve both environmental and genetic factors. There is a strong genetic link to genes synthesizing the hypocretin neurotransmitter (HLA-DR2 and HLA-DQ1). It is postulated that an autoimmune process may result in the death or depletion of hypocretin producing cells resulting in the symptoms of narcolepsy.

## **Diagnosis**

The diagnosis of narcolepsy is made by polysomnography and multiple sleep latency tests. The overnight sleep study is usually normal. The abnormality of excessive daytime sleepiness shows-up on the subsequent nap studies. Characteristically, patients with narcolepsy fall asleep quickly (in less than five minutes on average) when given a chance to nap on four or five occasions separated by a period of two hours between naps. Once asleep, patients may enter REM sleep early (within 15 minutes of falling asleep). Patients without narcolepsy normally do not enter REM sleep until 90-120 minutes into sleep. If a patient enters REM sleep on two or more occasions over a period of five naps, the likelihood that the patient has narcolepsy is increased.

## **Treatment**

The treatment of the excessive sleepiness symptom with narcolepsy includes insuring sufficient nighttime sleep, providing a short nap during the day, and stimulant medication. The stimulant medication is usually modafinil (Provigil), methylphenidate (e.g. Ritalin, Concerta, Metadate), Adderall, and Dexedrine.

The symptoms of cataplexy and sleep paralysis can be treated with a tricyclic antidepressant (TCA) (e.g. protryptiline, imipramine) or selective serotonin reuptake inhibitor (SSRI) (e.g. Prozac). For TCA or SSRI failures, sodium oxybate (i.e. Xyrem) has been found to be effective.