



# RESTLESS LEGS SYNDROME: A Literature Review

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## ABSTRACT:

Restless legs syndrome (RLS) is a common neurological sensory-motor disorder that is characterized by intense restlessness and unpleasant creeping sensations deep inside the lower legs. Dopamine agonists (DAs) represent the first-line treatment in restless legs syndrome (RLS); however, in the long term, a substantial proportion of patients will develop augmentation, which is a severe drug-related exacerbation of symptoms and the main reason for late DA withdrawal.

## KEY WORDS:

Restless leg syndrome, paresthesias, dopamine, Basel ganglia, pre synaptic and post synaptic

## DEFINITION

Restless legs syndrome (RLS), is also called Willis- Ekbom disease, is relatively common condition characterized by unpleasant sensory (paresthesias) and motor abnormalities of one or both legs.

## INCIDENCE

Prevalence rates vary from 5% to 15%, however, the numbers may be higher because the condition is underdiagnosed. RLS is more common in older adults. It is also more common in women than men, and women may have an earlier age of onset.

## TYPES OF RLS

There are two types of RLS:

- **PRIMARY RLS:** is considered idiopathic or with no known cause. Primary RLS usually begins slowly, before approximately 40–45 years of age and may disappear for months or even years.

- **SECONDARY RLS:** Secondary RLS often has a sudden onset after age 40, and may be daily from the beginning.

## CAUSES

While the cause is generally unknown, it is believed to be caused by changes in the neurotransmitter dopamine resulting in an abnormal use of iron by the brain. RLS is often due to iron deficiency (low total body iron status).

Other associated conditions may include,

- End-stage kidney disease
- Haemodialysis,
- Folate deficiency,
- Magnesium deficiency,
- Sleep apnoea,
- Diabetes,
- Peripheral neuropathy,
- Parkinson's disease, and
- Certain autoimmune diseases, such as multiple sclerosis. RLS can worsen in pregnancy, possibly due to elevated oestrogen levels.
- Attention deficit hyperactivity disorder (ADHD)
- Medications like, antiemetic's, antihistamines , antidepressants and antipsychotics
- Genetics: More than 60% of cases of RLS are familial and are inherited in an autosomal dominant fashion with variable penetrance.

## PATHOPHYSIOLOGY

Due to genetic factors



Binding dysfunction of dopamine to presynaptic and postsynaptic receptors in the basal ganglia



Iron deficiency that leads to limited synthesis of tyrosine hydroxylase



Possible increase CNS level of hypocretin-1



Diminished inhibition of descending spinal tract to the periphery



Restless leg syndrome

## CLINICAL MANIFESTATION

The chief symptom is an urge to move the legs. Common characteristics of RLS include:

- **Sensations that begin while resting.** The sensation typically begins after lying down or sitting for an extended time, such as in a car, airplane or Movie Theatre.
- **Relief with movement.** The sensation of RLS lessens with movement, such as stretching, jiggling the legs, pacing or walking.
- **Worsening of symptoms in the evening.** Symptoms occur mainly at night.
- **Night-time leg twitching.** RLS may be associated with another, more common condition called periodic limb movement of sleep, which causes the legs to twitch and kick, possibly throughout the night, while sleep.

## DIAGNOSTIC FINDINGS

The diagnosis of RLS is based on four specific criteria:

- Desire to move the extremities, often associated with paresthesias
- Motor restlessness
- Worsening of symptoms at rest with at least temporary relief from activity
- Worsening of symptoms in the evening or night

Polysomnography

Blood test such as, CBC, serum ferritin levels, and renal function tests may help to exclude secondary causes of RLS.

## MANAGEMENT

- Dopamine agonists manage the urge to move and sensory symptoms in your legs, and reduce involuntary leg jerks in sleep. Ropinirole, pramipexole.
- Anti-seizure medications can slow or block pain signals from nerves in the legs. Examples include gabapentin enacarbil, gabapentin.
- Benzodiazepines, clonazepam in particular, are sometimes prescribed for RLS but are usually reserved for more severe cases due to their addictive potential and side effects, including daytime drowsiness.
- Opioids, such as methadone or oxycodone, can be used to relieve symptoms of RLS.

## NURSING MANAGEMENT

- Educate to getting regular exercise, like riding a bike/stationary bike or walking, but avoiding heavy/intense exercise within a few hours of bedtime.
- Following good sleep habits, including avoiding reading, watching television or being on a computer or phone while lying in bed, Getting seven to nine hours of sleep and following other healthy sleep habit are also essential. Not getting enough sleep can worsen RLS symptoms.
- Avoiding or limiting caffeinated products (coffees, teas, colas, chocolates and some medications [check labels]), nicotine and alcohol.

- Applying a heating pad, cold compress or rubbing your legs to provide temporary relief to your leg discomfort. Also consider massage, acupuncture, walking, light stretching or other relaxation techniques.
- Reduce stress as much as possible. Try meditation, yoga, soft music or other options.

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