

# Comparative Analysis of Homoeopathic Remedies for Willis-Ekbom Syndrome: A Decisive Approach

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**Abstract:** *Restless Legs Syndrome (RLS) is a common neurological disorder marked by an uncontrollable urge to move the legs, and sometimes even the arms, along with peculiar and discomforting sensations (paresthesias) deep within the limbs. The symptoms become apparent when the legs are at rest and are more pronounced during evening and night time. Thus, it significantly affects both mental and physical well-being of individuals grappling with this condition. Current therapeutic options encompass levodopa, dopamine agonists, opioids, benzodiazepines, antiepileptic drugs, and iron supplements, but their impact on improving mental and physical well-being is limited. The objective of this article is to provide suffice knowledge regarding RLS and explore its management using Homeopathic remedies with reportorial analysis.*

**Keywords:** Restless leg syndrome, Homoeopathy, Willis-Ekbom disease

## 1. Introduction

Restless Legs Syndrome (RLS) is a circadian rhythm disorder that impacts both sensory and motor functions, resulting in sleep disruptions, cognitive difficulties, and signs of depression<sup>(1)</sup>. Dr. Karl-Axel Ekbom coined the term "restless leg syndrome" in 1945, and it is also known as Willis-Ekbom disease<sup>(2)</sup>. The prevalence of RLS ranges from approximately 5% to 15% in the general population, with females predominance. A family history of RLS is particularly common among the patients whose symptoms appear before 40 years of age, while the onset of symptoms after 50 years of age have less familial occurrence and are more likely to have a secondary causes<sup>(3)</sup>.

### Aetiology

The exact cause of RLS remains unclear, but various pathophysiological mechanism have been suggested. However it is noteworthy that when a case with no apparent cause and appears to have hereditary component this type is referred as primary restless leg syndrome<sup>(4)</sup>.

Secondary restless leg syndrome can occur secondary to various underlying disorder includes iron deficiency anaemia, kidney failure, antidopaminergic medication, diabetic mellitus, peripheral neuropathy etc. Approximately 1/3rd of pregnant individuals experience RLS, but fortunately symptom improves within a few week after giving birth.

### Pathophysiology

The exact underlying mechanisms of Restless Legs Syndrome (RLS) remain partially understood, but a prevailing theory proposes that RLS may stem from a

dysfunction in the dopamine-producing cells located in the nigro-striatal regions of the brain. Cutting-edge brain imaging has provided evidence of diminished dopamine D2 receptor binding in the striatal area among individuals who have been diagnosed with RLS.

Iron is likely to play a role in the onset of this condition since it serves as a crucial cofactor within the brain, facilitating the synthesis of dopamine and the regulation of dopamine receptors, which in turn impacts the amount of dopamine present in the synaptic cleft. Notably, individuals with Restless Legs Syndrome (RLS) exhibit reduced levels of both iron and ferritin in their cerebrospinal fluid<sup>(2)</sup>.

A study found that the elevation in melatonin secretion is the only observed changes that precedes the onset of sensory and motor symptoms in RLS, which exhibits a noticeable circadian rhythm, with a peak occurrence at night time. This suggests that melatonin may influence these symptoms through inhibition of dopamine release within the central nervous system. Thus dopamine act as an excitatory and inhibitory neurotransmitter in spinal cord to regulate sensory, motor as well as autonomic functions<sup>(5)</sup>.

### Clinical Features

Symptoms of Restless Legs Syndrome includes:

- Irresistible urge to move the legs frequently and individuals find themselves needing to stand up and move around multiple times in order to get relief.
- Unpleasant, creeping or crawling sensations deep within the lower legs, most commonly localised between the knees and ankles.
- These sensation is often worse in evening or at night.

- Few individual may complain about true pain which is felt as dull ache of different intensity, while majority of people complains creeping sensation only.
- Loss of sleep in serious consequences.
- Restless Legs Syndrome is frequently associated with involuntary, rhythmic muscular jerks in the lower limbs like dorsiflexion or fanning of toes, flexion of ankles, knees and hips, so-called periodic limb movements (PLMS).
- The onset of Restless Legs Syndrome (RLS) can occur at any age, ranging from childhood to over 80 years old, while the natural clinical course can be differ significantly<sup>(2)</sup>.

### Diagnostic Criteria

The diagnosis of restless leg syndrome primarily relies on thorough clinical history and an in – depth physical and neurological examination. Currently there is no available laboratory test to confirm the presence of RLS. In 1995, the international RSL study group (IRLSSG) initiated standardized clinical diagnostic criteria and it was subsequently revised in 2002. There are four essential criteria to make conclusive diagnosis of RLS.

- 1) An urge to move the legs, usually accompanied or caused by uncomfortable and unpleasant sensations in the legs.
- 2) Symptoms are worsen during periods of rest or inactivity such as lying or sitting.
- 3) The urge to move or unpleasant sensations are partially or totally relieved by movement, such as walking or stretching, at least as long as the activity continues.
- 4) The urge to move or unpleasant sensations are worse in evening or night than during the day<sup>(6)</sup>.

### Differential Diagnosis

Multiple conditions that may resemble RLS but they do not fulfil the four essential diagnostic criteria for RLS.

- Periodic limb movement disorder - legs or arm twitch and jerk every 20-40 sec during sleep yet people are unaware of these movements; occurs either in sleep or day time with periodically reoccurrence; does not have any abnormal sensation in leg and arm.
- Akathisia - side effects of neuroleptic medication, causing patients to experience an inner sense of restlessness that prevents them from remaining still.
- Nocturnal leg cramp - usually sudden, involuntary onset; especially affects the calf, foot or thighs with intense muscle pain.
- Peripheral neuropathy – results from nerve damage; temporary or permanent numbness, tingling, prickling or burning sensation, increased sensitivity, pain, muscle weakness or muscle wasting<sup>(2)</sup>.

### Management and Treatment

Typically, treatment for Restless Legs Syndrome is not initiated in patients experiencing sporadic or mild symptoms. Instead, a comprehensive management approach may incorporate both medication and non-pharmacological strategies tailored to the individual's specific symptoms. Dopaminergic agents are the preferred choice in most cases that too Levodopa is more effective for many individuals with mild to moderate RLS, but it can worsen symptoms (augmentation) when used in higher doses. Patients with secondary RLS should prioritize the treatment of the

underlying condition, if possible, before addressing the RLS itself.

Regarding non-pharmacological intervention, the following measures should be suggested to patients:

- Sleep hygiene
- Exercise
- Hot or cold bath
- Limb massage
- Vibratory or electrical stimulation of the feet
- The elimination of caffeine before bedtime<sup>(7)</sup>

### Homoeopathic Approach

A holistic and individualised concept of medicine known to be a high therapeutic value in the management of Restless Leg Syndrome. It selects the right medicine on the basis of holistic symptoms of the patient not just the diagnostic disease term. There are numerous number of drugs in materia medica which shall be used therapeutically, here some of the important medicine were as follows: Zinum metallicum, Tarentula, Arsenicum album, Rhus toxicodendron, kalium carbonicum, Medorrhinum, Ammonium carbonicum, Causticum, Natrum muriaticum, Argentum nitricum, Cuprum metallicum, Magnesium phosphoricum and Ferrum.

### Repertorial Approach

The repertory is a comprehensive reference in the field of Homeopathic Materia Medica, containing a wealth of data gathered from drug proving's, toxicology and clinical observations. Repertorisation is basically an elimination process that begins with a large selection and gradually reduces it to a manageable small group of medicines, making the final decision easier with the aid of additional references to the Materia Medica. Here some of the rubrics related to restless leg syndrome in different repertories:

- **Phatak's Repertory**<sup>(8)</sup>

Leg- restless: ZINC, *Tarn*, *Rhus-t*, *Agar*, *Ars*, *Carb-v*, *Kali-c*, *Med*, *Nit-acid*, *Sul*, *Tub*.  
Menses, during: *Lac-c*  
Night, at: *Ars*, *Caust*, *Med*, *Tarn*.

- **Repertory by Oscar E. Boericke**<sup>(9)</sup>

**Locomotor System- Legs - Restless, fidgety** *Ars.*, *Carbo v.*, *Caust.*, *Cim.*, *Cinch.*, *Con.*, *Crot.*, *Graph.*, *Kali br.*, *Lil. t.*, *Lyc.*, *Med*, *Menyanth.*, *Merc. c.*, *Myg.*, *Nit. ac.*, *Phos.*, *Rhus t.*, *Ruta*, *Scutel.*, *Sep.*, *Sulfon.*, *Tar. h.*, *Tarax.*, *Thasp.*, *Zinc. m.*, *Zinc. v.*

- **Kent's Repertory**<sup>(10)</sup>

#### Extremities- Restlessness, lower limbs-Leg:

Daytime, during rest: *Hep*.  
Morning, in bed: **Caust.**, *hep.*, *psor*.  
evening : *Alum.*, *carb-v.*, *caust.*, *kali-c.*, *lyc.*, *merc.*, *natc.*, *plat.*, *sep.*, *stann.*, **Tarent.**, **Zinc**.  
Night: *Ars.*, **Caust.**, *cham.*, *con.*, *eupi.*, *mag-c.*, *phos.*, *zinc*.  
Heat, during: *Bell.*, *bor.*, **Calc.**, *nux-v.*, **Rhus-t.**, **Sabad.**, *sep.*, *sulph*.  
Rising, after: *Psor*.  
Sitting, while: *Alum.*, *anac.*, *plat*.  
Sleep, before: **Ars.**, *lyc.*, *nat-m.*; during: **Caust.**, *nat-m*.  
Walking, while: *Anac*.

**BBCR REPERTORY<sup>(11)</sup>**

**Lower Extremities, phenomena, restlessness, impulse to move, limb**

Acon., Alum., (Am-c.), **Anac.**, **Ars.**, Asaf., Bar-c., Bell., **Bry.**, Bufo, Calc., **CANN-S.**, **CARB-V.**, **CAUST.**, Cham., Chin., Cimic., Graph., **Kali-br.**, **Kali-c.**, **Kali-i.**, Lil-t., Lyc., Mag-c., Mag-m., **Meph.**, **MERC.**, **Mez.**, Mosch., Nat-c., Nat-m., Nux-m., **NUX-V.**, Petr., **Phos.**, **PLAT.**, Psor., Puls., **RHUST.**, **Ruta**, Sabin., **SEP.**, Squil., Stann., Staph., Stram., Sulph., **VALER.**, **ZIN C-VAL.**, **ZINC.**

**Upper Extremities, phenomena, restlessness and movements of, hand**

**Bell., Hyos., Kali-br., Stram., Sulph., Tarent., Valer. Upper Extremities, phenomena, restlessness and movements of, finger**

**AGAR.**, Camph., Cupr., Hyos., **KALI-BR.**, Kali-c., **MOSCH.**, Rheum, Sec., Spig.

**Boeninghausen's Therapeutic Pocket Book<sup>(12)</sup>**

**Sensations, Restlessness**

Acon., Am-c., Am-m., Ant-t., Ars., Asaf., Bell., Bry., Camph., Cann-i., Cann-s., Cic., Cimic., Cina, Cocain., Colch., Con., Dig., Dros., Dulc., Guai., Hell., Hyos., Ign., Ip., Kali-c., Kalm., Kres., Led., Lith-c., Lyc., Mosch., Nux-v., Oind., Oxyt., Petr., Phyt., Plat., Plb., Puls., Rhus-t., Sec., Sep., Stram., Sulph., Verat., Zinc.

**Comparison of remedies<sup>(13, 14, 15, 16, 9)</sup>**

<b>ZINCUM METALLICUM</b>	<b>ARSENICUM ALBUM</b>	<b>KALIUM CARBONICUM</b>
<p><b>Constitution:</b> Person of nervous exhaustion, defective vitality; brain or nerve power wanting. Tissue are worn out faster.</p> <p><b>Characteristic features:</b> Incessant and violent fidgety feeling in feet or lower extremities. Must move them constantly. Excessive nervous moving of feet in bed for hours after retiring; &lt; even when asleep. Pain in limbs. Weakness and trembling of hand while writing and during menses.</p>	<p><b>Constitution:</b> Best for debilitated, exhausted and restless (mentally and physically) person.</p> <p><b>Characteristic features:</b> Uneasiness in the lower limbs, must move the feet constantly or move about, cannot lie still at night. Person cannot rest in any place; changing places continually; &lt; after midnight. Burning pain in extremities.</p>	<p><b>Constitution:</b> Suited to person of soft tissue, old people of lax fibre; sensitive to atmospheric changes; worse on cold air.</p> <p><b>Characteristic features:</b> Uneasiness, heaviness and tearing sensation in limbs. Jerks the limb especially when the feet are touched. Crawling shuddering in tibia. Jerking of muscle of buttocks and thighs. Restlessness of leg &lt; evening. Numbness and great inclination of whole limb to fall asleep esp. &lt; while lying</p>

<b>KALIUM BROMATUM</b>	<b>CAUSTICUM</b>	<b>MAGNESIUM PHOSPHORICUM</b>
<p><b>Constitution:</b> Adapted for large person inclined to obesity; profound melancholic delusion with restlessness and sleeplessness due to worry and grief.</p> <p><b>Characteristic features:</b> Fidgety of hands. Jerking and twitching of fingers. Hand and fingers constant in motion.</p>	<p><b>Constitution:</b> person with dark hair rigid fibre; weakly psoric with excessively yellow, sallow complexion; an intense sympathy for sufferings of others.</p> <p><b>Characteristic features:</b> Restless legs at night. Pain like electric shock. Numbness and heaviness especially right side of hand. Unsteadiness of muscle of forearm and hand. Tendency to paralysis of single part.</p>	<p><b>Constitution:</b> Emaciated person of highly nervous organization; great dread of cold air, of uncovering and touching of affected area.</p> <p><b>Characteristic features:</b> Involuntary shaking of hands. Weakness and numbness in arm and hands.</p>

<b>FERRUM PHOSPHORICUM</b>	<b>NATRUM MURIATICUM</b>	<b>SULPHUR</b>
<p><b>Constitution:</b> Subject is not full blooded and robust but nervous, sensitive, anaemic with false plethora and easy flushing; A remedy for the first stage of all febrile distribution and inflammation before exudation sets in.</p> <p><b>Characteristic features:</b> Restless legs; weakness of lower limbs. &lt; on night; violent motion; &gt; gentle motion.</p>	<p><b>Constitution:</b> A person with marked disposition to weep; sad weeping mood without cause; but consolation of others worsen the complaints; for anaemic and cathetic person whether from loss of vital fluid, profuse menses or mental affections.</p> <p><b>Characteristic features:</b> General nervous trembling pervades the body. There is jerking of muscle, trembling of limbs, inability to keep the limb still as in zincum. &lt; raising from seat; &gt; on continued walking. Numbness and tingling sensation in fingers and lower extremities</p>	<p><b>Constitution:</b> Adapted for ragged philosopher with unclean dirty, filthy people, prone for skin affections; complaints that are continually relapsing; standing is the worst position for sulphur patient who have great aversion to being washed.</p> <p><b>Characteristic features:</b> Restlessness in legs and feet. Torpor and numbness of legs.</p>

NITRICUM ACIDUM	CALCAREA PHOSFORICA	TUBERCULINUM
<p><b>Constitution:</b> Special seat of action where the mucous membrane and skin meets; Person suffering with chronic disease who takes cold easily; hydrogenoid constitution; Great anxiety about his disease; constantly thinking about his past troubles.</p> <p><b>Characteristic features:</b> Restlessness in legs &lt; in evening. Lassitude, heaviness, and coldness in legs and feet.</p>	<p><b>Constitution:</b> Person of anaemic and dark complexion; thin spare subject instead of fat; tendency of bones to soften or spine to curve.</p> <p><b>Characteristic features:</b> Lower limb falls asleep. Restless with anxious feeling; has to move them or jump out of carriage; &lt;at night Legs tired, weak, restless, crawling and tingling sensation.</p>	<p><b>Constitution:</b> Person of tall slim narrow chest, mentally active but physically weak; losing flesh while eating well; Takes cold easily without knowing how and where; when with a family of tubercular affections.</p> <p><b>Characteristic features:</b> Restless leg with coldness of leg and foot. Worse on standing must move as sulphur.</p>

TARENTULA HISPANICA	RHUS TOXICODENDRON	AGARICUS MUSCARIUS
<p><b>Constitution:</b> Remarkable nervous phenomena, especially choreic affection and spinal irritability; hyperesthesia from least excitements.</p> <p><b>Characteristic features:</b> Constant movement of leg, arm, trunk, with inability to do anything. Extreme Restlessness, could not keep quiet in any position; must keep in motion though walking inspite it &lt; all symptoms. Uneasiness in leg.</p>	<p><b>Constitution:</b> Adapted to person of rheumatic diathesis; bad effects from getting wet especially after being over-heated; Find useful whenever tendon, ligament, aponeurosis and connective tissue are inflamed either due to overuse or exposure.</p> <p><b>Characteristic features:</b> Extreme restlessness with continued change of position; &lt; from rest. Great apprehension at night, cannot remain in bed. Numbness and prickling sensation in limbs &lt; over work and exposure. Tingling in feet. Arms nervous and shaky (left) Amelioration of all symptoms from continual motion.</p>	<p><b>Constitution:</b> Old people with weak and lax muscle; various forms of neurological and spasmodic affections; Bad effects from debauch; Complaints appears diagonally.</p> <p><b>Characteristic features:</b> Trembling and jerking motion of lower limbs and hands. Awkwardness of all the movements. &lt;in rest or sitting; &gt; moving. Pain in leg like electric shock Legs heavy and fatigued.</p>

ARAGALLUS LAMBERTI	LACTUCA VIROSA	MEDORRHINUM
<p><b>Constitution:</b> Acts principally on nervous system producing a bewildered and confused state.</p> <p><b>Characteristic features:</b> Restless and aimless wandering. Must concentrate on his walking. Weakness of limb.</p>	<p><b>Constitution:</b> A remedy for brain and extremities; delirium tremens with sleeplessness.</p> <p><b>Characteristic features:</b> Marked action on extremities Coldness and numbness in feet and leg. Tremors in hands and arms.</p>	<p><b>Constitution:</b> Effects of maltreated and suppressed gonorrhoea; person with weakness of memory even their own names; many symptoms are worse from thinking about them. <b>Characteristic features:</b> Nervous restlessness. Intense restless and fidgety of leg and feet. Leg heavy ache &lt;night; cannot keep them still; &lt; when giving up control of himself, when relaxing, in trying to sleep.</p>

## 2. Conclusion

Restless Leg Syndrome (RLS) is a demanding and frequently incapacitating condition that impacts both the mental and physical well-being. While conventional medicine primarily focuses on symptom management through medication, Homoeopathy offers an alternative approach that prioritizes the overall well-being of the person. This highlights the potential value of Homoeopathic remedies in enhancing the quality of life for those with RLS, addressing both mental and physical aspects of the condition.

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