Conversion disorder is characterized by unexplained symptoms affecting voluntary motor or sensory function in ways that suggest neurological disease, and by the presence of psychological conflicts which play a significant role in initiating, aggravating and maintaining the disturbance\(^1,2\).

According to DSM –IV the term Conversion Disorder (Hysterical Neurosis± Conversion type) is somatoform disorder group, and is described as a psychological disorder, characterized by somatic symptoms with no physiological abnormalities, but with an underlying psychological basis\(^3\).

It is a condition where a person presents with physical symptoms such as weakness, tingling, blindness or fits which cannot be explained by a medical condition. Individuals with conversion disorder do not intentionally produce or feign their symptoms. Instead, the symptoms are due to an unconscious expression of a psychological conflict or need\(^2\). Most of the conversion symptoms (CS) are neurological and usually relate to the locomotor system\(^1\). It is known as a psychiatric disorder where anxiety is thought to be converted into physical symptoms.

The symptoms are often reinforced by social support from family and friends or by avoiding underlying emotional discomfort. Symptoms usually begin suddenly after a stressful experience. People are more at risk for a conversion disorder if they also have a medical illness, dissociative disorder, or a personality disorder.

**Symptoms**

The motor symptoms include convulsions, paralysis, weakness, dyskinesia, equilibrium or coordination impairment, vocal disorders (hoarseness to aphasial), dysphagia or a choking sensation in the throat, bronchospasm, urinary incontinence and motor visual disorders (very rare, and expressed as blepharospasm). Sensory symptoms include paraesthesia or anesthesia, blindness or speech disorders\(^3\).

The common symptoms of conversion disorder include inconsistencies in repeated testing of sensation and muscle strength, manual muscle strength testing that does not correspond with the patient’s functional abilities and sensory impairments that do not follow anatomical patterns\(^2\).

Other signs may include jerky, exaggerated movements, unexplained tremors, bizarre gait patterns, and simultaneous contraction of agonist and antagonist muscles. A common motor complaint is astasia-abasia, which is an unsteadiness of gait presenting with unusual incoordination especially in walking or standing still\(^2\). This disorder consists of unil- or bilateral lower limb weakness, with possible accompanying ataxia and/or tremor. The gait does not usually resemble any pathological gait of known neurological origin. Dystonia and chorea are the most common conversion symptoms among children\(^3\). Patients demonstrate large truncal and extremity movements but are able to control their balance. They often will grab onto walls, chairs, or "fall" into bed, but will avoid a complete fall or injury\(^2\).

Subjects suffering from CD might behave in a way known as ‘la belle indifference’, a situation in which the patient appears detached from the physical symptoms, that otherwise would have caused him great anxiety. The intensity of the disability is usually to a level that affects activities of daily living\(^3\).

**Diagnosis**

The diagnosis is determined after ruling out organic components or other psychogenic diagnosis. This may involve brain scans such as MRI or CT scanning as well as blood tests.
Electrophysiological studies (electroencephalography, sensory and motor evoked potentials, urodynamics) are usually normal. There are no pathological findings in laboratory tests, supporting CD. On the other hand, however, pathological findings will not necessarily rule out CD.

Conversion reactions need to be distinguished from malingering. With malingering, the patient has a conscious secondary gain in mind. A person who exhibits a conversion reaction has physical symptoms that do not make physiologic sense. For instance, areas of numbness do not follow normal dermatome patterns, and muscle weakness may not be related to the expected nerve root involvement. Conversion disorder will rarely lead to physical changes or disability, so pressure sores, contractures or muscle atrophy are rare. Conversion disorder can be diagnosed by noting the following features:

- One manifestation of a conversion reaction is paralysis. The paralysis will often not follow a particular nerve root pattern but instead occur “just below the elbow” or “just below the knee.”
- Many times reported weakness will be more intense proximally than distally.
- Reflexes remain normal.
- Contractions of antagonist muscles are found when testing involved muscles.
- Bizarre gait pattern
- Slow motion movements
- Overflow of emotion during the examination (painful expression, tooth grinding, breath holding, etc).
- Normal muscle tone.
- Simultaneous contraction of agonist and antagonist muscles

**Treatment**

Inter-disciplinary rehabilitation treatment is imperative for conversion disorders. Treatment strategies used have included combinations of psychosocial support aimed at relieving precipitating stressors, behavioral approaches, and functional therapy techniques.

**Psychotherapy**

The cornerstone of treatment of conversion disorders is psychotherapy aimed at elucidating the emotional bases of the symptoms. Psychotherapy has been reported to be useful, relieving subconscious thoughts and feelings that manifest as functional disabilities.

Learning theory and behavioral shaping formed the basis for the behavioral modification treatment approach. The rationale behind this treatment approach is that the conversion disorder symptoms are maladaptive behaviors. The patients believe that they have a particular neurological condition. They often assume a “sick role” with its privileged social status and rewards of attention.

The goals of a behaviorally oriented treatment strategy include:

- Correcting the maladaptive responses
- Learning more appropriate reactions to the environment.
- To achieve these ends, reinforcement must be removed from the “sick” behavior and applied to “healthy” behavior.

In this treatment context, it is appropriate to attempt to eliminate the patient’s belief that the extremity is paralyzed, by telling the patient that:

- All tests indicate the nerves and muscles are functioning normally
- the brain has lost the ability to communicate with the nerves and muscles
- This ability is recoverable.

The patient should be treated as if the symptoms are organic otherwise it may lead to confrontation with their previous beliefs that their symptoms are physical.

Systematic structured functional rehabilitation is helpful in reducing symptoms and restoring normal function in the patient with conversion disorder through the principle of providing motivation and reducing reinforcement of abnormal movement which contributes to the disabled state.

**Medication**

There is little evidence to guide pharmacotherapy in conversion disorder. The clinical evidence for pharmacotherapy in conversion disorder is extremely limited and consists of case reports. Psychiatrists recommend sedative or antianxiety agents. Thus, therapeutic success has been reported with neuroleptics, haloperidol tricyclic antidepressants. Given the lack of data for controlled trials on the pharmacological treatment of
conversion disorder, the current practice is to use medications appropriate for the comorbid psychiatric and somatic symptoms and to withdraw antiepileptic drugs unless they are benefiting the comorbid conditions.

**Multidisciplinary Rehabilitation**

The affected body part or physical function will need physical therapy, occupational therapy, speech therapy and vocational counseling until the symptoms disappears. Physiotherapy treatment is essential in the management of people with conversion disorder to allow them to overcome their physical symptoms and prevent secondary complications such as muscle weakness and stiffness that may occur as a result of inactivity.

**Physiotherapy for Conversion Disorder**

Physiotherapy treatment is essential in management of conversion disorder despite the lack of an identifiable organic cause for the physical symptoms. People with conversion disorder are not in control of their symptoms consciously and it is not uncommon for patients to develop secondary problems such as weakness and muscle contractures as a result of their inactivity if left untreated. One of the main goals of rehabilitation of the patient with conversion disorder is to assist the individual to move away from a “sick role” and to return to healthy roles in their social, physical, and work life. Patient spends more time during exercise session with therapist hence their role in providing psychological support and counseling becomes important for successful achievement of exercise goals.

Benefits of Physiotherapy Include:

- Improved strength
- Reduced stiffness
- Increased independence
- Increased confidence
- Improved mobility
- Reduced anxiety
- Improve posture

The general progression of the treatment includes developing patient rapport, working on flexibility and initial weight-bearing activities, gait training in the parallel bars, which provides the patient with success and confidence, and then to gait in open spaces and in the community. The recommended interventions for this practice pattern are endurance training, balance training, postural stabilization, flexibility, gait and locomotion training, relaxation training, and strengthening. Patients should perform exercises which increase strength, reduce muscle and joint stiffness, functional task practice to increase independence, mobility practice and gait re-education to improve function, posture re-education, relaxation and breathing exercises to reduce anxiety.

Functional approaches have also been used, with treatment patterning techniques used for neurologically based motor disorders. Electromyography and functional electrical stimulation (F.E.S.) have also been used to allow the patient to see that the affected limb can move and to provide biofeedback to restore movement.

The tilt table, hydrotherapy, slings, and the

<table>
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<tr>
<th>Table-1. Treatment Progression²</th>
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<tbody>
<tr>
<td><strong>Therapist-Patient Interaction</strong></td>
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<tr>
<td>• Patient counseling for exercise program</td>
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<tr>
<td>• Initial evaluation and mutual goal setting with staff, patient and the family.</td>
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<tr>
<td><strong>Exercises for Paralyzed limb</strong></td>
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<tr>
<td>• Stretching, general strengthening, bed mobility skills</td>
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<tr>
<td>• Sitting and standing balance activities</td>
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<tr>
<td>• Functional Electrical Stimulation and Biofeedback techniques</td>
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<tr>
<td>• Balance Ball Exercises and Hydrotherapy if Applicable</td>
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<tr>
<td>• Coordination activities</td>
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<tr>
<td>• Transfer training</td>
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<tr>
<td>• Weight-shifting activities</td>
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<tr>
<td>• Training for independence in activities of daily living</td>
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<tr>
<td><strong>Exercises for gait abnormalities</strong></td>
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<tr>
<td>• Standing and beginning gait training in parallel bars or walker</td>
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<tr>
<td>• Gait training progression into stepping and weight shifting</td>
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<td><strong>Long term rehabilitation</strong></td>
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<td>• Home program</td>
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<td>• Overcoming barriers in job/school/activities of daily living.</td>
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<td>• Socialization-Activities in the community</td>
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balance ball are all helpful. Ball exercises are done to improve trunk balance before standing training. Balance exercises using equipment such as hydrotherapy, balance board and therapeutic ball ensure the patient has to use his leg power and trunk balance to prevent himself from falling down. Pool exercises and gait training using the treadmill and parallel bars can be helpful in increasing muscle strength, endurance and improving gait patterns. Walking exercises using parallel bars located in a busy area can promote ambulation experience in an open situation. Simple sports activities can also be helpful when normal walking behavior has been achieved. Some patients perform their exercises well yet are afraid to stand up. Such a patient is raised to his feet and kept upright by helpers so that he can see that he can stand. Even though initially he may cooperate poorly he is induced by a combination of praise and exhortation to remain upright. Once standing and the first few steps have been achieved the patient responds to standard gait training. The goal before discharge is for the patient to show his relatives that he can walk several hundred yards outdoors and manage stairs easily.

**Conclusion**

Patients with conversion disorders are generally misdiagnosed. Misdiagnosis can expose the patient to unnecessary treatment, testing, increased health care costs, and undue psychological stress. The inter-disciplinary in-patient team management approach in a rehabilitation setting offers the benefits of a comprehensive assessment and treatment for patients with conversion motor paralysis. Physical therapists are important members of the rehabilitation team involved in the management of conversion disorders. The role of physical therapist in the treatment of conversion disorder begins from counseling, exercise planning and execution, re-education, rehabilitation as well as to make patient independent in activities of daily living. The physical therapist can play an important role in rehabilitation and management of the patient with conversion disorder enhancing a quick recovery and return to their social, physical, and daily life.

**References**