# Movement disorder Emergencies

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Neuropsychiatry


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# List of Abbreviations

| | |
|---|---|
| ADHD | Attention-Deficit Hyperactivity Disorder |
| BMT | bone marrow transplantation |
| cpk | Creatine phosphokinase |
| CSF | Cerebro spinal fluid |
| CT | Computed tomography |
| D1 | Dopamine 1 receptors |
| D 2 | Dopamine 2 receptors |
| DIP | Drug induced Parkinsonism |
| DSM) | Diagnostic and Statistical Manual |
| DYT1 | Gene DYT1 |
| ECT | electroconvulsive therapy |
| ED | Economo’s disease |
| EEG | Electroencephalography |
| Gpi | globus pallidus interna |
| HD | Huntington's disease |
| ICU | Intensive care unit |
| LSD | Lysergic acid diethylamide |

| | |
|---|---|
| MC | Malignant catatonia |
| MDMA | Methylioxymethamphetamine |
| MPTP | 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine |
| MRI | magnetic resonance image |
| NMS | Neuroleptic malignant syndrome |
| NMLS | neuroleptic malignant-like syndrome |
| NMDA | N-methyl-D-aspartic acid |
| PANDAS | Pediatric autoimmune neuropsychiatric disorders associated with streptococcal infections |
| PEP | Postencephalitic .parkinsonism |
| PHS | parkinsonism-hyperpyrexia syndrome |
| SC | Sydenham's chorea |
| SNc | substantia nigra pars compacta |
| SNr | substantia nigra pars reticulata |
| SSRIs | Selective serotonin-reuptake inhibitors |
| STN | subthalamic nucleus |

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# Introduction

Movement disorder emergency is defined as any neurological disorder, evolving acutely or subacutely, in which the clinical presentation is dominated by a primary movement disorder, and in which failure to accurately diagnose and manage the patient may result in significant morbidity or even mortality. Movement disorder emergencies include such diverse entities as acute forms of Parkinsonism, chorea, neuroleptic malignant syndrome, malignant catatonia, akinetic crisis, Sydenham's chorea ***(Frucht and Fahn, 2005).***

The key to success in diagnosing and managing a patient presenting with a disorder of movement is to establish the phenomenology of the problem. Although the broad definition of patients into those who move too much (hyperkinetic disorder) or too little (hypokinetic or akinetic-rigid disorder) is relatively straightforward, differentiating jerky dystonia from tremor, or tics from chorea or myoclonus, for example, may not be a simple task to the inexperienced physician. To make matters more complicated, the movement disorder may sometimes be 'mixed' (for example, myoclonic dystonia or dystonic tremor) ***(Burn, 2006).***

Clinical diagnosis of these cases is the best after good observation to the single or complex movements.

Acuet parkinsonism is aterm used to describe secondary

causes of parkinsonism , sometimes also referred to as pseudo-parkinsonism, is the second most common cause of akinetic rigid syndrome in the western world. Its prevalence is increasing due to an aging population and the rise of polypharmacotherapy ***(Mena and Yebenes, 2006).***

Neuroleptic malignant syndrome (NMS) is a rare but potentially lethal adverse reaction arising from the use of medications that involve the central dopaminergic system such as phenothiazines, butyrophenones and the more recent atypical agents ***(Morita et al., 2004).***

Status dystonicus is a life threatening disorder that develops in patients with both primary and secondary dystonia, characterized by acute worsening of symptoms with generalized and severe muscle contractions, how to diagnose and recent approaches in management **(*Mariotti et al., 2007*).**

Some of these disorders presented with psychiatric manifestations as depression, malignant catatonia, conversion and hallucination and psychosis in patient with Parkinson disease.

Prompt recognition of these emergencies is crucial, and diagnosis is based on history and phenomenology. Supportive and temporizing measures must be implemented immediately before disease-specific therapy is begun***(Hu and Frhcht, 2008***).

# Aim of the work

- To review the different methods in diagnosis of movement disorder emergencies in different situations.
- To review the management of movement disorder emergencies for better treatment of such cases.

# General principle

The term movement disorders often are used synonymously with basal ganglia or extrapyramidal diseases, but neither of those terms adequately encompasses all the disorders included under the broad umbrella of movement disorders. Movement disorders are neurological motor disorders manifested by slowness or poverty of movement (bradykinesia or hypokinesia, such as that seen in parkinsonian disorders at one end of the spectrum and abnormal involuntary movements (hyperkinesias) such as tremor, dystonia, athetosis, chorea, ballism, tics, myoclonus, akathisias, and other dyskinesias at the other***(Jancovich and Lang, 2004).***

Although motor dysfunctions resulting from upper and lower motor neuron, spinal cord, peripheral nerve and muscle diseases usually are not classified as movement disorders. Abnormalities in muscle tone (e.g., rigidity, spasticity, and stiff man syndrome), incoordination (cerebellar ataxia; and complex disorders of execution of movement denoted by the term apraxia) are now included among movement disorders ***(Jancovich and Lang, 2004).***

# Classification

In general movement disorders can be classified into:

## Hypokinetic disorders

Akinesia, hypokinesia, and bradykinesia are terms used to describe patients with an absence or paucity of movement. The latter term is most commonly used, and refers to patients with Parkinsonism. (***Kumar and Calne*,*2004***)

## Hyperkinetic disorders

Once the examiner has determined that a patient has a hyperkinetic movement disorder, the next question is: which one is it? The major categories of hyperkinetic disorders include five conditions: dystonia, chorea, tics, myoclonus, and tremor.Rarer hyperkinetic movement disorders include entities such as paroxysmal dyskinesias, stereotypies, and episodic ataxia, and restless leg syndrome, periodic limb movements of sleep, hemifacial spasm, and hyperekplexia. Of these, only hyperekplexia (exaggerated startle syndrome) qualifies as a movement disorder emergency ***(Frucht and Fahn, 2005)***.

Basal ganglia considered being the seat of most movement disorders, Vesalius and Piccolomini distinguished

subcortical nuclei from cortex and white matter in the 16th century. Willis' mistaken concept in the late 17th century that the corpus striatum was the seat of motor power persisted for 200 years and formed the basis of mid-19th-century localizations of movement disorders to the striatum. By the late 19th century, many movement disorders were described but for most no pathologic correlate was known **(*Lanska, 2009).***

The globus pallidus, named for its pale appearance, is a dense wedge of nerve tissue that occupies the center of the basal ganglia region. The deepest portion of the globus pallidus, named the posteroventral medial globus pallidus interna (GPi), is the site of the pallidotomy operation, and represents the main outflow connection from the globus pallidus to the thalamus. The globus pallidus is a larger and more complex structure than subthalamic nucleus (STN), with a complicated internal circuitry. Like STN stimulation, globus pallidus stimulation has broad beneficial antiparkinsonian effects ***(Ford, 2009).*** Basal ganglia structures shown in figure (1):