MOVEMENT DISORDERS
AN OVERVIEW
THE SPECTRUM OF MOVEMENT DISORDERS

- Akinetic-rigid syndromes/ Parkinsonism
- Tremor
- Dystonia
- Athetosis
- Chorea
- Ballism
- Tics
- Myoclonus
THE AKINETIC - RIGID SYMPTOMS

- Idiopathic Parkinson’s Disease
- Parkinsonism (Drug induced)
- Parkinson’s Plus Syndromes (PSP, Multiple System Atrophy, Corticobasal Ganglionic Degeneration)
IDIOPATHIC PARKINSON’S DISEASE

- Degenerative disease of the Basal ganglia affecting people in middle to late life
- Mean age of onset 55-60 years
- Younger onset in familial cases
- Possible male predominance
IPD 3 - CARDINAL FEATURES

- Tremor
- Rigidity
- Bradykinesia
- Disturbance in posture or equilibrium
IPD 4 - TREMOR
IPD 5 - RIGIDITY
IPD 8 - AETIOLOGY

• Cause unknown
• Presumed combination of genetic susceptibility and environmental factors
• Familial Parkinson’s Disease has provided much information
• genes identified in Familial Parkinson’s Disease
PATHOGENESIS

• Genetic/environmental factors trigger abnormal protein folding

• Leads to accumulation of toxic protein products within the Dopaminergic neurons in the Nigrostriatal pathway

• Leads to mitochondrial damage (Complex 1) and cell death

• Nigrostriatal damage leads to imbalance in Basal Ganglia circuitry
TREMOR

- Defined as a rhythmic oscillation of a body part.
- Resting, postural, intention
- Typical resting tremor seen in Parkinson’s Disease
- Typical intention tremor - Cerebellar disease
- Typical Postural and action tremor - Essential tremor
DYSTONIA

- Disorder characterised by sustained muscle contractions which frequently cause twisting and repetitive movements or abnormal postures
- May be focal or generalised
- Focal eg Blepharospasm, Torticollis
- Generalised viz Idiopathic Torsion Dystonia
CHOREA

- Irregular, unpredictable, brief jerky movements that flit from one part of the body to another in a random sequence.
- Sydenham's Chorea
- Huntington's Chorea
- Wilson's Disease
TIC DISORDERS

• Abrupt, transient, stereotypical, coordinated movements which vary in intensity and occur at irregular intervals.
• Tics may be motor or vocal.
• Classic example is Tourette’s Syndrome.
BALLISM

- These movements are wide in amplitude, violent, flinging or flailing in nature
- Usually unilateral -- Hemiballismus
- Usually caused by lesion in the Subthalamic Nucleus
MYOCLOONUS

• Defined as sudden, brief shock-like involuntary movements
• Wide range of clinical patterns
• May be Physiological, Epileptic, or part of a progressive or static encephalopathy
DRUG THERAPY
• Remains the Gold Standard
• Use is limited by motor complications
• Effective against tremor, rigidity and bradykinesia
• Administered with a DDI
• Regular and CR preparations
LEVODOPA 2
MOTOR COMPLICATIONS

• Motor fluctuations
• Dyskinesias
• Occur in 50-90% of patients on Levodopa for 5-10 years
LEVODOPA 3

MOTOR FLUCTUATIONS

- Occur late in disease
- Clinical response becomes unpredictable
- Latency to onset of effect increases
- May have rapid fluctuations between “On” and “Off” periods
• Involuntary movements in response to Levodopa therapy
• Peak dose, end-of-dose or both
• Usually Choreiform, Dystonic, or Myoclonic
• Tend to occur with motor fluctuations
DOPAMINE AGONISTS 1
COMT INHIBITORS
OTHER DRUGS
ANTICHOLINERGICS

- Limited use
- Younger patients with tremor as the dominant symptom
- Useful if patient has excessive salivation
- Contraindicated in the elderly
AMANTADINE
(SYMMETREL)
OTHER SYMPTOMS IN PARKINSON'S DISEASE
FREEZING EPISODES

• Inability to initiate walking
• Symptom of advanced disease
• Motor tricks - Marching on the spot, placing an object on ground to step over, using a laser pointer, goose-stepping
SURGERY IN PARKINSONS DISEASE

- Thalamotomy
- Pallidotomy
- DBS-Thalamus
- DBS - GPi
- DBS - STN
INDICATIONS FOR SURGERY

• No evidence to suggest that any of the surgical procedures is better than the best medical therapy
• They are indicated for the treatment of drug resistant motor complications
PARKINSON’S PLUS SYNDROMES

- PSP
- MSA - C, MSA-P
- CBGD