

Multiple Sclerosis

- Demyelinating disease of the central nervous system resulting in sensory, motor or cognitive problems.

Causes → Unknown

1) Genetic Factors:

- Female, Monozygotic twins,
- HLA DR2,

2) Environmental:

- Infections (Epstein Barr Virus),
- Vitamin D Deficiency.

Pathophysiology:

T cells Type IV hypersensitivity

↓
Attach to the myelin (Oligodendrocytes)

↓
Release Cytokines (IFN, IL6, TNF)

↓
More Immune cells, B cells & Macrophages

↓
Antibodies → Demyelination (Plaque Scars)

↓
After some time → T cell regulation stops
the inflammation

↓
Recurrent damage

↓
Demyelination again, which
is irreversible.

Types:

1) Relapsing - Remitting - 80%.

2) Primary Progressive → 10-20%.

3) Secondary Progressive 4) Fulminant < 1%.

Clinical Features

- Vary depending upon location of Plaques.
- Affects 20-40 yrs old.

① Charcot's Neurological triad

i) Nystagmus → P. Involuntary Rapid Eye movements.

→ Plaques in Nerves of Eyes.

Optic Nerve

- loss of vision.

- Optic Neuritis.

→ Black spots, Blurred vision.

Movements

→ Pain

→ Double vision.

ii) Dysarthria → Unclear speech or difficulty in eating & talking & swallowing.

→ Plaques of Brainstem.

iii) Intention Tremor.

→ Plaques in motor pathway.

→ Muscle weakness, spasm.

Tremors, Ataxia.

② Plaques in sensory pathway

- Numbness, Pains & Needles, Paraesthesia, tingling, itching, burning.

③ Lhermitte's Sign.

→ Electric shock runs down back and radiates to limb when bending neck forward.

④ Plaques in Autonomic → Bowel, Bladder, Sexual.

⑤ Frontal lobe → lack of concentration, critical thinking, Depression.

- ⑥ Cranial Nerve → Trigeminal, Abducent,
Facial palsy,
⑦ Partial Brown-Sequard syndrome.

Investigations

MRI → White matter of plaques
CSF → ↑ Antibodies, T lymphocytes,
visual evoked potential

" Exclude other conditions

↳ Chest X-ray,

Serum angiotensin converting enzyme,

Serum Vit B12,

Antinuclear antibodies

Antiphospholipid antibodies

Treatment

- Physical Therapy
- Cognitive Rehabilitation Therapy
- Plasmapheresis