

Adult Nursing II

Neurological Disorders

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Neurological Disorders: Etiology

- Structural problem
- Metabolic disturbance
- Auto-immune conditions
- Degenerative neurological disease

- All compromise brain and nervous tissue function

Structural Causes of Neurological Dysfunction

- Congenital anomalies: hydrocephalus
- Trauma: head or spinal injury (damaged neurons, cerebral oedema, haematoma)
- Intracranial haemorrhage, thrombus or embolus: \uparrow intra-cranial pressure (\uparrow ICP)
- Infection: encephalitis, meningitis (exudate \uparrow ICP)
- Poor perfusion: TIA (\downarrow carotid blood flow)
- \downarrow myelination: Vitamin B12 deficiency

Structural Causes of Neurological Dysfunction: Summary

- Neurological dysfunction is caused by:
- Direct damage to neurons, or indirect through expansion of brain tissue in fixed cranium → increased ICP
- Poor cerebral perfusion → ischaemia and infarction of brain tissue
- Poor conduction of impulses (demyelination)

Metabolic Causes of Neurological Dysfunction

- Sepsis: ↑ temperature
- pH changes: acid/ base balance
- Hypoglycaemia
- Diabetic Ketoacidosis or hyperosmolality
- Electrolyte imbalance
- Hypertension
- Drug/ alcohol abuse
- Hepatic or renal encephalopathy

Metabolic Causes of Neurological Dysfunction: Summary

- Neurological dysfunction is caused by:
- Accumulation of toxins
- Inappropriate physical or metabolic environment for nerve cell function
- Cerebral oedema

Auto-immune Conditions Affecting Neurological Function

- Neuromuscular diseases:
- Multiple Sclerosis (MS)
- Myasthenia Gravis
- Guillain-Barre syndrome (GBS)

Auto-immune Conditions Affecting Neurological Function: Summary

- Neurological dysfunction is caused by:
- MS: auto-immune progressive demyelination
- Myasthenia Gravis: auto-immune disease affecting the neuromuscular junction of voluntary muscles
- GBS: auto-immune inflammation and paralysis of peripheral motor nerves

Degenerative Neurological Disease

- Parkinson's disorder
- Degenerative neuromuscular disease
- Alzheimer's disease and dementia

- Progressive, incurable deterioration of neurological system