Pharmacology week 12 – Neurotransmitters & LA

Contributes to 'Nervous System' which makes up 14% of the pharmacology MCQ matrix.

Reference: Katzung's Basic and Clinical Pharmacology, 14th edition. Chapters 6, 21, 26

This is a reasonably light week for pharmacology, use it to catch up on any topics you may have missed previously

There is some deliberate repetition to aid revision of the ANS for pharmacology

Focus on local anaesthetics - this has been a popular exam topic

Learning Outcomes LOA 1

- *Drugs acting on the sympathetic system (revision)*
- *Drugs acting on the parasympathetic system (revision)*
- Local anaesthesia

Learning Outcomes LOA 2

- Neurotransmitters

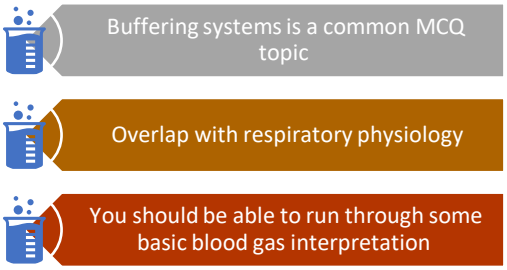
Questions to consider

- Revise chapter 6 for cholinergic and adrenergic transmission and autonomic receptors
- Tell me about the blood brain barrier. Where is it exactly? What is its role?
- What happens when a neurotransmitter acts at a receptor?
- Tell me about action potentials in the CNS. What is the threshold? What is an EPSP?
- How can drugs act to alter this process and synaptic transmission? (Fig 21-4)
- Outline the neurotransmitters active in the CNS. How can they be categorised?
- How can you classify the local anaesthetics?
- How do local anaesthetics work?
- Outline the pharmacokinetic and pharmacodynamic properties of lignocaine, bupivacaine, prilocaine and tetracaine
- Tell me about the intrinsic susceptibility of nerve fibres Tab 26-3
- What happens in local anaesthetic toxicity? How does this affect our clinical decisions when using local anaesthetics? What is a safe dose of lignocaine? Bupivacaine?

Physiology week 12 – Renal Acid-Base Handling

Contributes to 'Renal Physiology' which makes up 15% of the physiology MCQ matrix.

Reference: Ganong's Review of Medical Physiology, 26th edition. Chapter 39



Learning Outcomes LOA 1

- Hydrogen and bicarbonate regulation
- Acidosis and alkalosis

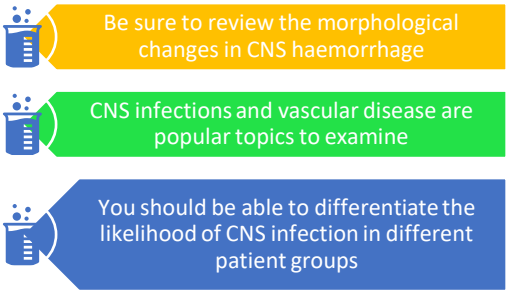
Questions to consider

- Tell me about renal H+/HCO3 handling
- What is the limiting pH for urine?
- Describe the buffering systems within the renal system
- What is compensation?
- What is the renal response to an acid load?
- What is the specific ionic composition along the renal tubules

Pathology week 12 – Nervous System part 1

Contributes to 'CNS & Eye which makes up 5% of the pharmacology MCQ matrix.

Reference: Robbins and Cotran Pathologic Basis of Disease, 9th edition. Chapter 28



Learning Outcomes LOA 1

- Cerebral oedema and raised intracranial pressure
- Trauma
- Cerebrovascular disease
- Infections

Questions to consider

- What is the neuronal response to disease? Describe the different morphologies
- Compare and contrast vasogenic, cytotoxic and interstitial oedema. Give examples
- What is hydrocephalus?
- Outline the patterns of cerebral herniation
- Describe the different developmental anomalies affecting the CNS
- What determines the clinical consequences in CNS trauma?
- What is the morphological pattern in a diffuse axonal injury?
- Describe the patterns of vascular injury seen in the CNS. Do they have any distinguishing features in clinical presentation or on imaging?
- Describe what can happen in impaired blood supply and oxygenation of the CNS. What are the mechanisms of this? Describe the morphological changes
- What are the sources of emboli to the brain? By what other mechanisms does focal cerebral ischaemia occur? (*common viva topic*)
- Outline the pathophysiology of hypertensive cerebrovascular disease
- Outline the pathophysiology and morphological changes in intracranial haemorrhage
- Tell me about the frequency and location of aneurysms within the circle of Willis
- What are the risk factors for subarachnoid haemorrhage? Outline the potential clinical presentations
- How can we classify the vascular malformations affecting the CNS?
- Outline the different CNS infections, their clinical syndromes and common causative organisms (*comes up commonly*)
- Tell me about the prion diseases (*brief look only*)

Anatomy weeks 11 & 12 – Lower Limb: Knee and Leg

Contributes to 'Lower Limb' which makes up 25% of the anatomy MCQ matrix.

Reference: Moore and Dalley's Clinically Oriented Anatomy, 8th edition. Chapter 7
Supplementary Reference: McMinn's clinical atlas of human anatomy 7th edition. Chapter 7