

Pharmacology – II (Year 3 Semester 2)

Credits: 2.0

Drugs in Nervous System Diseases

Duration: 4 weeks (20 days)

Topic/ Concept	Objectives	Time	T/L activity	Dept.	Comments
2006-3/SBM-06/01 Effects of common poisons on the CNS	<ol style="list-style-type: none"> recall actions of neurotransmitters describe the neurophysiological basis of clinical features associated with these poisons 	1	Lecture	Medicine	Introduce common poisons in Sri Lanka
2006-3/SBM-06/02 Mind and Consciousness	<ol style="list-style-type: none"> describe the evolution of the definition of the mind describe the brain- mind relationship describe the neurobiology of mind and behaviour describe the religious and cultural models of mind and behaviour 	1	Lecture	Psychiatry	
2006-3/SBM-06/03 Introduction to abnormal behavior and approaches to mental illness	<ol style="list-style-type: none"> describe what is abnormal behavior list the important neurotransmitters in mental illness describe the changes in neurotransmission that lead to psychopathology of depression, delusions and hallucinations 	1	Lecture	Psychiatry	Approaches to mental illness- This part is better done in year 4
2006-3/SBM-06/04 Effect of substances of abuse (Alcohol, cocaine, heroin, tobacco, street drugs)on the CNS and Behavior	<ol style="list-style-type: none"> describe disease model of substance list biological mechanisms of substance dependence compare and contrast moral model of substance abuse with disease model 	2	Seminar	Psychiatry and Pharmacology	
2006-3/SBM-06/05 Principles of drug treatment (to modify the altered structure and function) in common CNS disorders General and local anesthetics Alcohol and tobacco abuse Analgesics Anti inflammatory drugs	<ol style="list-style-type: none"> recall the steps involved in the neurotransmission recall the important neurotransmitters and the receptors on which they act recall the electrophysiological basis of <ol style="list-style-type: none"> resting membrane potential action potential excitatory post-synaptic potentials inhibitory post-synaptic potentials identify possible mechanisms by which drugs can modify the neuronal function general anesthetics (1 hour) <ol style="list-style-type: none"> define sleep, amnesia, analgesia, general anaesthesia 	10 2	Lectures SGD	Pharmacology	

	<ol style="list-style-type: none"> 2. list different phases/planes of general anaesthesia 3. classify the agents used for general anaesthesia 4. list the drugs used for induction and maintenance of general anaesthesia 5. describe the mechanism of action, pharmacokinetics, therapeutic and adverse effects, and drug interactions of different anaesthetic drugs. 6. compare the pharmacological effects of thiopentone sodium, propofol and ketamine. <p>local anesthetics (1 hour)</p> <ol style="list-style-type: none"> 1. recall how an action potential is generated and propagated 2. classify local anesthetics (LA) 3. describe the mechanisms of action, pharmacokinetics and toxic effects of local anesthetics 4. describe the different techniques of use of LA 5. describe the risks and benefits of using vasoconstrictors with LA <p>Epilepsy</p> <ol style="list-style-type: none"> 1. define the terms 'seizure' and 'epilepsy' 2. classify the epileptic seizures 3. describe the mechanism of action, pharmacokinetics, adverse and toxic effects, important drug interactions of commonly used antiepileptic drugs 4. explain the clinical significance of the variability of pharmacokinetics of phenytoin 5. list the appropriate anti-epileptic drugs for the treatment of different seizures/epilepsy syndromes. 6. describe the basis of drug treatment of status epilepticus 7. explain the basis of the safe use of antiepileptic drugs during pregnancy. <p>movement disorders</p> <ol style="list-style-type: none"> 1. describe the mechanisms of action, pharmacokinetics, adverse effects of drugs used in the treatment of movement disorders (Parkinsonism, dystonia, chorea, tremors) <p>migraine</p> <ol style="list-style-type: none"> 1. describe the pathophysiology of migraine 2. describe the mechanism of action, pharmacokinetics, adverse effects of drugs used in the treatment of migraine <p>neuromuscular junction</p> <ol style="list-style-type: none"> 1. list the drugs/agents that influence the neurotransmission at the neuromuscular junction 2. list the types of neuromuscular blockers 3. describe the mechanisms of action, pharmacokinetics, clinical 				
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	<p>uses, adverse effects of drugs acting on the neuromuscular junction.</p> <ol style="list-style-type: none"> name the muscle relaxants commonly used during general anaesthesia describe the basis of the use of acetylcholinesterase inhibitors in myasthenia gravis and reversal of the effects of muscle relaxants 				
<p>2006-3/SBM-06/06 Basis of psychopharmacology to include biochemistry of neurotransmitters and biochemistry of drug metabolism</p>	<p>anxiolytics/Hypnotics</p> <ol style="list-style-type: none"> define <ol style="list-style-type: none"> an anxiolytic a hypnotic list different classes of commonly used anxiolytic/hypnotic drugs with examples describe the mechanism of action, pharmacological effects, pharmacokinetics, adverse effects and important drug interactions of the drugs mentioned in 2. explain the clinical significance of pharmacokinetics of benzodiazepines describe the toxic effects (acute overdose) of benzodiazepines and basis of the use of an antidote. describe the problems encountered with the continued use of hypnotics and the measures that can be taken to minimize them. <p>antidepressants</p> <ol style="list-style-type: none"> recall the biochemical basis of depressive illness. classify the antidepressant drugs (with examples) based on their mechanism of action describe the mechanism of action, pharmacokinetics, adverse drug effects, important drug/food interactions of antidepressants list the clinical uses of antidepressants other than the treatment of depression list the features of antidepressant drug overdose <p>antipsychotics</p> <ol style="list-style-type: none"> recall the biochemical basis of psychotic illnesses. classify the antipsychotic drugs (with examples) describe the mechanism of action, pharmacokinetics, adverse drug effects of antipsychotic drugs list the clinical uses of antipsychotic drugs <p>mood stabilizers</p> <ol style="list-style-type: none"> describe the mechanisms of action, pharmacokinetics, adverse and toxic effects of mood stabilizers <p>dementia</p> <ol style="list-style-type: none"> describe the mechanisms of action, pharmacokinetics, adverse effects of drugs used in the treatment of Dementia 	4	lecture	Pharmacology	

<p>Skill:</p>	<p>should be able to perform a complete examination of the nervous system, record the findings accurately, interpret the findings and localise lesions within the nervous system</p>	<p>1</p>	<p>Video demonstration of neurological examination & common disorders</p> <p>Bed side Clinical examination of the nervous system</p>	<p>Medicine</p> <p>Lecture/ video demonstration to be conducted at the beginning of the module</p>	<p>Head medicine to get a pre intern from the skills lab to record cerebellar, bell's, hemiparesis, gaits, foot drop, nystagmus etc</p> <p>16 groups under supervision of SR, R</p> <p>1hr per group – 2:00-3:00 and 3:00 – 4:00</p>
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