Systematic Pathology II Module
2009/10 Batch– Year 3 Semester 2

Web Copy

Topic/ Concept	Objectives	Time	Dept.	T/L Activity
2009-3/PATH-SBM-4/01				
Pathological processes and the effects of such processes on the central and peripheral nervous system (anatomical and functional) **Infections/ Inflammation** **Demyelination** **Degeneration** **Tumors** **cerebral oedema** **ischaemia and infarction** **haemorrhage**	1. recall the principles of pathological processes discussed in FM3 in relation to the nervous system	9h	Pathology	Lectures/ Museum class (2 hrs) /Tutorial
	2. describe the aetiopathogenesis of common infections of the nervous system			
	3. describe the pathology of common infections of the nervous system			
	4. describe the basic pathological processes involved in demyelination and degenerative deseases of the brain and nerves			
	5. describe the pathology of neoplasms of the brain , spinal cord and peripheral nerves			
	6. describe the pathogenesis of cerebral oedema and its effects		Microbiology	
	7. describe the pathogenesis of cerebral ischaemia, infarction and haemorrhage and its effects			
2009-3/PATH-SBM-4/02				
Alimentation in health	1. recall digestion, absorption and metabolism relating to, carbohydrates, proteins, fat, vitamins, minerals & trace elements			Recall
	2. recall normal structure and functions of the liver, gut, pancreas and biliary tract			
	3. recall the neural and hormonal control of the alimentation			

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2009-3/PATH-SBM-4/03				
The role of nutrients, the requirements & sources	recall			Recall
1. the concept of a healthy wholesome diet				
2009-3/PATH-SBM-4/04				
Normal bowel flora	recall			Recall
2009-3/PATH-SBM-4/05				
Diarrhoea				
1. Mechanisms	recall			
2. Effects				
3. Therapies	**2009-3/PATH-SBM-4/8**			
2009-3/PATH-SBM-4/06				
Vomiting				
1. Mechanisms	recall			Self learning
2. Effects				
3. Therapies	**2009-3/PATH-SBM-4/8**			
	At the end of the module, student should be able to,			
2009-3/PATH-SBM-4/07				
Introduction to GI pathology	1. apply principles of general pathology to the diseases of the gastrointestinal system (acute and chronic inflammation, metaplasia, dysplasia, neoplasia) – Recall		Pathology	

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2009-3/PATH-SBM-4/08				
Infective disease in relation to alimentation				
a. Infective diarrohea, Food poisoning	1. list the causes of infective diarrohea and food poisoning 2. describe the pathogenesis of infective diarrhoea 3. state the key methods of diagnosis of infective diarrhoea and food poisoning 4. outline key methods in prevention of infective diarrhoea and food poisoning		Microbiology	Lecture
b. Pathological changes in gut infections	1. describe the pathogenesis, morphological changes and complications of infections in the oesophagus, stomach, duodenum, small intestine, colon and anus. 2. List the opportunistic infections in the gastrointestinal system in immunocompramised hosts.	1h	Pathology	Lecture
c. Malnutrition associaterd with Intestinal Infections	1. name the intestinal protozoans and helminths that cause malnutrition in Sri Lanka 2. state the general clinical features that indicate malnutrition with infection caused by each of these agents 3. describe briefly the major mechanisms responsible for malnutrition in each infection		Parasitology	Lecture

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2009-3/PATH-SBM-4/09				
a. Oesophagus & Stomach	**Oesophagus:** 1. discuss the effects and complications of gastrosophageal reflux disease. 2. name the causes of oesophagitis. **Stomach**: 1. discuss the causes, morphology and complications of acute gastritis 2. discuss the causes, morphology and complications of chronic gastritis 3. discuss the causes of gastric ulceration, emphasising the morphological changes in each condition.	2h + 2h + 1h	Pathology	Lecture+ Museum class
b. Diseases of small intestine and appendix	Malabsorption syndromes: 1. recall the physiology of digestion and absorption 2. discuss the outcomes in failure in each step in digestion and absorption. 3. list causes of malabsorption. 4. discuss the eatiolopathogenesis, morphology, clinical symptoms and complications of coeliac disease. 5. outlines the eatiolopathogenesis, morphology, clinical symptoms and complications of Whipples disease and tropical sprue	2h	Pathology	Lecture
	Appendix 1. List the causes of inflammation of the Appendix. 2. Discuss the aetiopathogenesis, morphology, complications and clinical outcomes of acute appendicitis.			

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2009-3/PATH-SBM-4/10				
Inflammatory bowel disease	1. recall chronic inflammation. 2. describe the pathogenesis, morphological changes, clinical outcomes and complications of ulcerative colitis and Crohn's disease. 3. compare and contrast the features of ulcerative colitis and Crohn's disease 4. List extra intestinal manifestations of the above.	2h + 1h + 1h	Pathology	Lecture + Tutorial + Museum Class
2009-3/SBM-4/11				
Anal and peri anal disease	1. recall acute and chronic inflammation and carcinogenesis. 2. describe the aetiopathogenesis, morphological appearances and complications of -fissures, fistulae, ulcers, haemorrhoids, and tumours.	1h + 1h	Pathology	Lecture + Tutorial
2009-3/PATH-SBM-4/12				
Neoplasms of the Gatrointestinal tract	1.list the common neoplasms (benign and malignant) in the following organs: oesopgagus, stomach, small intestine, colon, appendix and anus. 2. discuss the malignant neoplasms of the above organs with regard to aetiopathogenesis (emphasising the premalignant lesions), morphology, modes of spread and clinical outcomes. 3. outlines the polyposis syndromes in the gastrointestinal tract	2h + 1h	Pathology	Lecture+ Museum class
2009-3/PATH-SBM-4/13				
Introduction to liver pathology	apply the principles of general pathology to the liver diseases – Recall		Pathology	

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2009-3/PATH-SBM-4/14				
Liver disease	1. describe the aetiopathogenesis and morphological changes and complications of acute hepatatis, chronic hepatitis and liver abscess.	2h+ 1h + 1h	Pathology	Lecture+ Museum class+ Tutorial
	2. describe the pathogenesis, morphological appearances and complications of alcoholic liver disease,nonalcoholic fatty liver disease (NAFLD) and cirrhosis.			
	3. descibe the pathological changes and effects of portal hypertension.			
	4. describe the pathology of hepatomegaly			
	5. recall amyloidosis, storage diseases, acute and chronic venous congestion and steatosis			
	6. interpretation of investigations in diseases of the liver (i). interpret serum markers of acute and chronic hepatitides. (ii). understand the principles and interpretation of investigations of common liver diseases.(acute and chronic hepatitides, cirrhosis, portal hypertension, ascites,NAFLD,alcoholic liver disease and tumours.)	1h	Medicine	Lecture
2009-3/PATH-SBM-4/15				
Diseases of the Biliary system	1.describe the aetiopathogenesis, morphology, complications and clinical out comes of obstructive jaundice, billiary calculi and acute and chronic cholecystitis. 2. outline the tumours of the liver and the billiary system and discuss their modes of spread	2h	Pathology	Lecture+ Museum class

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2009-3/PATH-SBM-4/16				
Pancreatic disease	1.describe the aetiopathogenesis, morphology, complications and clinical out comes of acute and chronic pancreatitis. 2. outline the biochemical investigations in acute and chronic pancreatitis 3. outline the tumours of pancrease emphasising the modes of spread and clinical outcomes.	2h	Pathology	Lecture
2009-3/PATH-SBM-4/17				
a. Imaging of GI diseases		1h	Radiology	Lecture
	1. radiological, pathological correlation of gastrointestinal diseases discussed in this module			
	2. radiological pathological correlation of hepatobiliary and pancreatic diseases	1h+ 1h	Radiology/ NMU	Lecture
b. To introduce Nuclear medicine application in clinical practice	3. to understand organ physiology and its functions with regard to radioisotope upatake			
	4. to understand practical applications on given clinical areas			

2009-3/PATH- SBM-4/18				
Kidneys and the urinary tract	Recall			Recall
a. Auto regulation of renal blood flow				
b. The basic functional unit of the kidney (nephron) - structural and functional aspects				
c. Role of the kidney in regulation of ECF volume & tonicity				
d. Role of the kidney in the maintenance of blood pH				

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2009-3/PATH-SBM-4/19				
Mechanisms of dysfunction of the kidneys and the urinary tract	Recall			Recall
a. Renal excretory function				
(i). with reduced nephron mass - GFR, Tubular functions, Constituents of urine				
(ii). in disturbed functions of other systems (Circulation, respiration ect.)				
(iii). in disturbed renal blood flow and autoregulation of blood flow				
(iv). in anomalous urine flow & obstruction to the urine flow				
2009-3/PATH-SBM-4/20				
Introduction to GU pathology	1. apply principles of general pathology to the Genito Urinary tract. (acute and chronic inflammation, metaplasia, dysplasia, neoplasia)		Pathology	Recall
2009-3/PATH-SBM-4/21				
Pathology of kidney and urinary tract				
a. Infections	1. describe the pathology and pathogenesis of infections in the urinary tract to include a)Acute and chronic pyelonephritis b) Urinary Tuberculosis	1h	Pathology	Lecture

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b. Glomerularnephritis, Glomerular lesions, fibrosis	2. describe the pathology (macro & micro) & pathogenesis of glomerular nephritis with special reference to immune complex mediated disease 3. describe the glomerular pathology associated with systemic vasculitides and other systemic diseases. SLE and Goodpasture's syndrome etc 4. describe the pathology and pathogenesis of diabetic nephropathy renal amyloidosis describe the features of the nephritic syndrome and nephrotic syndrome and correlate with the above topics	13h	Pathology	Lecture + Tutorial
c. Tubular and interstitial	5. describe the pathology and pathogenesis of tubulo interstitial disease including tubular necrosis, cortical necrosis, papillary necrosis and interstitial nephritis			
d. Urolithiasis	6. Urolithiasis, complications and clinical features		Pathology	Lecture + Tutorial + Museum Class
e. Tumours of the kidney and bladder	7. Tumours of the kidney and bladder. Be able to describe the macroscopy, microscopy,and clincal features of the common tumours, including spread and metstasis.-Be able to discuss carcinogenic agents associated with these tumours.			
f. Acute and chronic renal failure **RPGN** **Other common conditions** **Investigations**	Clinical aspects of the urinary tract Eg: Renal diseases Screening	2h 1h	Medicine Pathology	Lecture Lecture
g. Imaging of the diseases of the urinary tract	1. list the different imaging modalities used in different disease conditions discussed in this module.	1h + 1h	Radiology + NMU	Lecture

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	2. to know the radiological features of the pathological conditions discussed above.			
Skills				
Collection of urine samples for urinalysis & microbiology	During clinical appointment			
Identification of abnormal constituents of urine	During clinical appointment			
Examination of the abdomen and external genitalia	During clinical appointment			
Giving instructions to the patients on how to collect a 24 hour urine sample	During clinical appointment			
Interpretation of X-rays (Normal/Abnormal)	During clinical appointment			
2009-3/PATH-SBM-4/22				
Female genital tract				
a. Vulva & vagina **b. Uterus** **c. Fallopian tubes** **d. Ovaries**	1. skin lesions, Bartholian cyst and abscess,vulval dystrophy, vaginitis pathology and clinical features	1h	Pathology	Lecture
	2. Hyperplasia, fibroids, adenomyosis, cervicitis, endometrial carcinoma, cervical carcinoma, tumours assoicated with gestation. Pathology and clinical features	2h	Pathology	Lecture
	3. Endometriosis, Pelvic Infalmmatory Diseasse, tubal pregnancy and tubal carcinoma. Pathology and clinical features	2h	Pathology	Lecture + Tutorial
	4. Oophoritis, Tuboovarian masses, polycystic ovarian disease, tumours , and tumour markers Touch on imaging and US Scan. Pathology and clinical features	3h	Pathology	Lecture + Museum Class

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2009-3/PATH-SBM-4/23				
Common pathological lesions in male genital tract (Urethritis, epididymoorchitis, Hydrocoel, Torsion) **a. Pathology of penis** **b. Pathology of prostate** **c. Testis/epididymis**	1. describe the etio pathogenesis morphology and complications of these conditions	2h	Pathology	Lecture
	2. Xerotica Balanitis Obliterans,Condylomata acuminata, carcinoma	1h	Pathology	Lecture
	3. Benign hyperplasia, prostatitis, abscess and carcinoma and prostatic tumour markers.	1h	Pathology	Lecture + Tutorial
	4. Infections, tumours. Be able to describe the pathology of a scrotal lump.	1h	Pathology	Lecture
2009-3/PATH-SBM-4/24				
Psychological disorders in sexuality and reproduction	1. discuss common myths regarding sexuality	2h	Psychiatry	Lecture
2009-3/PATH-SBM-4/25				
Breast		1h	Pathology	Lecture
a. Common non malignant diseases	1. Abscess, Mastitis, Duct ectasia, Hyperpalstic disease			
b. Neoplasms	2. Duct papilloma, nipple adenoma, fibroadenoma, phylloides tumour, ductal and lobular carcinoma- Grading system DCIS-Low grade Ductal Intraepithelial Lesions. FNA Biopsy, Hook wire guided biopsy, Familial carcinoma etc..	1h + 1h	Pathology	SGD
c. Skin	1. describe the pathology & clinical manifestations of common skin diseases	1h	Pathology	Lecture
Medico-legal aspects – Rape, Infanticide, Abortion			Forensic Medicine(DIS)	

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Clinical Skills				
PV Examination	During clinical appointment			
Speculum Examination	During clinical appointment			
Examination of breasts	During clinical appointment			
Maintain a partogram	During clinical appointment			
Starting and maintaining an oxytocin infusion	During clinical appointment			

Pharmacology II Module
2009/10 Batch - Year 3 Semester 2

Topic/ Concept	Objectives	Time	T/L activity	Dept.
2009-3/PHARM- SBM-04/01 **Effects of common poisons on the CNS**	Student should be able to, 1. recall actions of neurotransmitters 2. describe the neurophysiological basis of clinical features associated with these poisons	1	Lecture	Medicine
2009-3/PHARM- SBM-04/02 **Mind and Consciousness**	1. describe the evolution of the definition of the mind 2. describe the brain- mind relationship 3. describe the neurobiology of mind and behaviour 4. describe the religious and cultural models of mind and behaviour	1	Lecture	Psychiatry

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2009-3/PHARM- SBM-04/03 **Introduction to abnormal behavior and approaches to mental illness**	1. describe what is abnormal behavior 2. list the important neurotransmitters in mental illness describe the changes in neurotransmission that lead to psychopathology of depression, delusions and hallucinations	1	Lecture	Psychiatry
2009-3/PHARM- SBM-04/04 **Effect of substances of abuse (Alcohol, cocaine, heroin, tobacco, street drugs)on the CNS and Behavior**	1. describe disease model of substance 2. list biological mechanisms of substance dependence 3. compare and contrast moral model of substance abuse with disease model	2	Seminar	Psychiatry and Pharmacology
2009-3/PHARM- SBM-04/05 **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**	1. recall the steps involved in the neurotransmission 2. recall the important neurotransmitters and the receptors on which they act 3. recall the electrophysiological basis of i. resting membrane potential ii. action potential iii. excitatory post-synaptic potentials iv. inhibitory post-synaptic potentials 4. identify possible mechanisms by which drugs can modify the neuronal function general anesthetics (1 hour) 1. define sleep, amnesia, analgesia, general anaesthesia 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 anesthesia 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.	10 2	Lectures SGD	Pharmacology

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	local anesthetics (1 hour) 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 Epilepsy 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. movement disorders 1. describe the mechanisms of action, pharmacokinetics, adverse effects of drugs used in the treatment of movement disorders (Parkinsonism, dystonia, chorea, tremors) migraine 1. describe the pathophysiology of migraine 2. describe the mechanism of action, pharmacokinetics, adverse effects of drugs used in the treatment of migraine neuromuscular junction 1. list the drugs/agents that influence the neurotransmission at the neuromuscular junction			

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	2. list the types of neuromuscular blockers 3. describe the mechanisms of action, pharmacokinetics, clinical uses, adverse effects of drugs acting on the neuromuscular junction. 4. name the muscle relaxants commonly used during general anaesthesia 5. describe the basis of the use of acetylcholinesterase inhibitors in myasthenia gravis and reversal of the effects of muscle relaxants			
2009-3/PHARM- SBM-04/06 **Basis of psychopharmacology to include biochemistry of neurotransmitters and biochemistry of drug metabolism**	anxiolytics/Hypnotics 1. define i. an anxiolytic ii. a hypnotic 2. list different classes of commonly used anxiolytic/hypnotic drugs with examples 3. describe the mechanism of action, pharmacological effects, pharmacokinetics, adverse effects and important drug interactions of the drugs mentioned in 2. 4. explain the clinical significance of pharmacokinetics of benzodiazepines 5. describe the toxic effects (acute overdose) of benzodiazepines and basis of the use of an antidote. 6. describe the problems encountered with the continued use of hypnotics and the measures that can be taken to minimize them. antidepressants 1. recall the biochemical basis of depressive illness. 2. classify the antidepressant drugs (with examples) based on their mechanism of action 3. describe the mechanism of action, pharmacokinetics, adverse drug effects, important drug/food interactions of antidepressants 4. list the clinical uses of antidepressants other than the treatment of depression	4	Lecture	Pharmacology

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	5. list the features of antidepressant drug overdose antipsychotics 1. recall the biochemical basis of psychotic illnesses. 2. classify the antipsychotic drugs (with examples) 3. describe the mechanism of action, pharmacokinetics, adverse drug effects of antipsychotic drugs 4. list the clinical uses of antipsychotic drugs mood stabilizers 1. describe the mechanisms of action, pharmacokinetics, adverse and toxic effects of mood stabilizers dementia 1. describe the mechanisms of action, pharmacokinetics, adverse effects of drugs used in the treatment of Dementia			
Skill: **2009-3/PHARM- CLM-04/01**	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	1	Video demonstration of neurological examination & common disorders Bed side Clinical examination of the nervous system	Medicine Lecture/ video demonstration to be conducted at the beginning of the module

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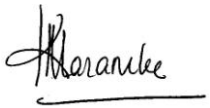
Topic/ Concept	Objectives	Time	Dept.	T/L Activity
2009-3/PHARM-SBM-4/07				
Drugs in relation to alimentation	1. describe the mechanism of action, pharmacokinetics, clinical uses, adverse reactions and interactions of (i). anti-emetics (ii). anti-spasmodics (iii). laxatives (iv). anti-diarrhoeal agents 2. explain the basis on which antiemetics are selected in different clinical situations. 3. list the commonly used anti-diarrhoeal agents and describe their clinical uses and limitations	1h	Pharmacology	Lecture
	2. describe the mechanism of action, pharmacokinetics, clinical uses, adverse reactions and interactions of (i). antacids (ii). H2 receptor antagonists (iii). proton-pump inhibitors (iv). cytoprotective agents (v). gastric prokinetic agents (metoclopromide, domperidone) (vi). Interaction of drugs used for Helicobacter pylori eradication	1h	Pharmacology	Lecture
	4. describe the mechanism of action, pharmacokinetics and adverse effects of drugs in inflammatory bowel disease	1h+ 1h	Pharmacology	Lecture + SGD



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2009-3/PHARM- SBM-4/08				
Drugs acting on the reproductive system				
	Recall			
	1. describe the hormonal changes that occur during the menstrual cycle		Obstetrics & Gynaecology	Recall
	2. describe the effects of oestrogens/ progestogens in female sexual development		Obstetrics & Gynaecology	Recall
	3. list the effects of oestrogens/ progestogens in the musculo-skeletal system, digestuve system, CVS and CNS		Medicine	Recall
	4. list different types of oestrogen preperations available and their pharmacokinetic differences	3h	Pharmacology	Lecture
	5. list the clinical uses of oestrogens and progestogens, and their combination therapy			
	6. list the advantages and disadvantages of hormonal contraception			
	7. list the benefits and risks of post menopausal oestrogen therapy			
	8. describe the mode of action and clinical uses and ADR of			
	(i). tamoxifen			
	(ii). clomiphene citrate			
	(iii).mifepristone (prostaglandins)			
	(iv). danazole			
	9. describe the clinical uses and misuses of anabolic steroids and their ADR			
	10. list the different classes of drugs used in the treatment of carcinoma of prostrate			

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