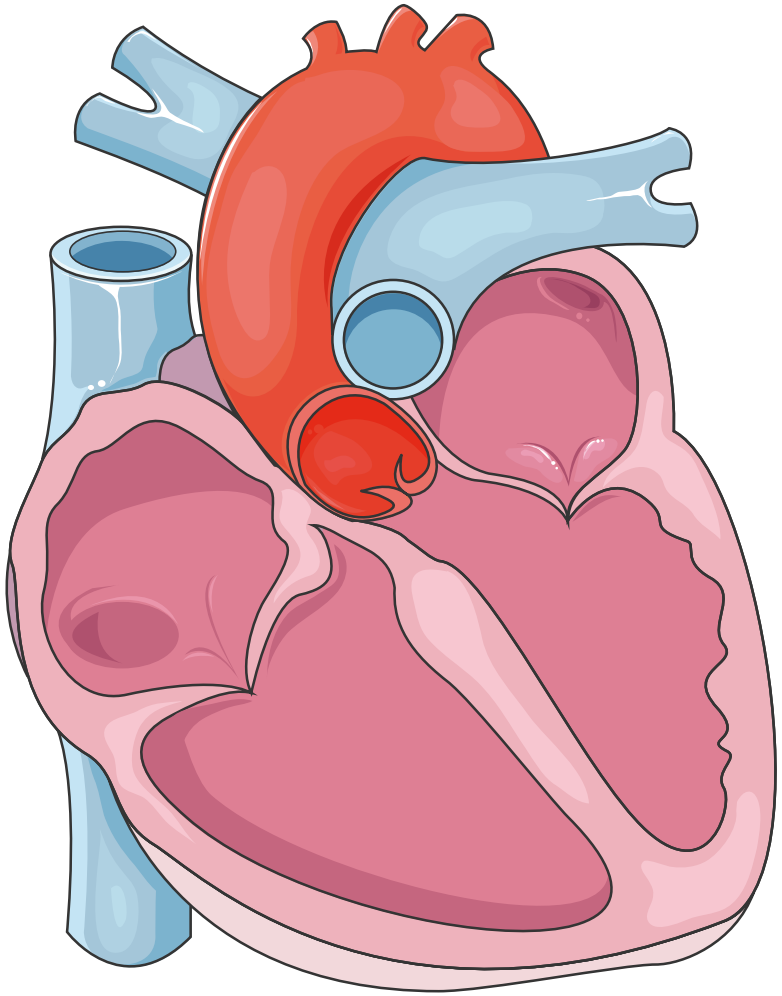
RISH ACADEMY's

Pathophysiology Made Easy eBook



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Dedication

To my family and friends, thank you for your love and support.

- Cardiovascular System Disorders
- Respiratory System Disorders
- Nervous System Disorders
- Endocrine System Disorders
- Gastrointestinal System Disorders
- Immune System Disorders
- Urologic System Disorders
- Women’s Health and Perinatal Disorders
- Dermatologic System Disorders
- Mental Health Disorders
- Musculoskeletal System Disorders
- Sensory System Disorders

AAA	abdominal aortic aneurysm
ABG	arterial blood gases
ABI	ankle-brachial index
ac	before meals
ACE	angiotensin-converting enzyme
AChE	acetylcholinesterase
AChR	acetylcholine receptor
ACLS	advanced cardiac life support
ACTH	adrenocorticotropic hormone
ADH	antidiuretic hormone
ADHD	attention-deficit/hyperactivity disorder
ADLs	activities of daily living
AED	antiepileptic drug
AF	atrial fibrillation
AFB	acid-fast bacillus
AGC	atypical glandular cells
AIDS	acquired immunodeficiency syndrome
ALL	acute lymphocytic leukemia
ALP	alkaline phosphatase
ALS	amyotrophic lateral sclerosis
ALT	alanine aminotransferase
AMI	acute myocardial infarction
AML	acute myelogenous (myeloblastic) leukemia
ANA	antinuclear antibody
ANP	atrial natriuretic peptide
anti-CCP	anticyclic citrullinated peptide
APAP	acetaminophen
aPTT	activated partial thromboplastin
ARDS	acute respiratory distress syndrome
AS	aortic stenosis
ASA	acetylsalicylic acid
ASC	atypical squamous cells
ASCA	anti–Saccharomyces cerevisiae antibody
ASC-US	ASC of undetermined significance
AST	aspartate aminotransferase
AV	atrioventricular
AVM	arteriovenous malformation
AVP	arginine vasopressin
BBB	bundle branch block
BCG	bacille Calmette-Guérin
BCP	birth control pills
BD	Buerger's disease
BHS	beta-hemolytic streptococci
bid	two times a day
BMI	body mass index
BMS	bone marrow suppression
BMT	bone marrow transplant
BNP	brain natriuretic peptide
BP	blood pressure
BPH	benign prostatic hyperplasia
bpm	beats per minute
BRM	biologic response modifier
BROW	barley, rye, oats, and wheat
BSA	body surface area
BSE	breast self-examination
BUN	blood urea nitrogen
BUN	blood urea nitrogen
BX	biopsy
C&S	culture and sensitivity
CA	coronary artery
Ca+	serum calcium
Ca++	calcium
CABG	cardiac artery bypass graft
CAD	coronary artery disease

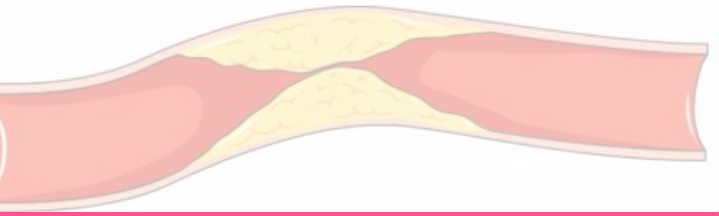
cap	*capsule*
CBC	*complete blood count*
CBI	*continuous bladder irrigation*
CBT	*cognitive behavioral therapy*
CD4	*T-helper cells*
CD8	*cytotoxic cells*
CEA	*carcinoembryonic antigen*
CFTR	*cystic fibrosis transmembrane regulator*
CHF	*congestive heart failure*
CIN	*cervical intraepithelial neoplasia*
CK	*creatine kinase*
CK-MB	*serum creatine kinase, myocardial bound*
CLL	*chronic lymphocytic leukemia*
CML	*chronic myelogenous leukemia*
CNS	*central nervous system*
CO	*cardiac output*
COMT	*catechol-O-methyltransferase*
COPD	*chronic obstructive pulmonary disease*
COX-2	*cyclooxygenase 2 inhibitors*
CPHSS	*Cincinnati Prehospital Stroke Scale*
CPK	*creatine phosphokinase*
CPM	*continuous passive motion*
CPR	*cardiopulmonary resuscitation*
CR	*controlled release*
CREST	*calcinosis, Raynaud's phenomenon, esophageal dysfunction, sclerodactyly, telangiectasia (cluster of features of systemic sclerosis scleroderma)*
CRP	*c. reactive protein*
CRS-R	*Conners Rating Scales–Revised*
CS	*cardiogenic shock*
CS	*cesaerean section*
CSF	*cerebrospinal fluid*
CSF	*colony-stimulating factor*
CT	*computerized tomography*
CV	*cardiovascular*
CVA	*cardiovascular accident*
CVC	*central venous catheter*
CVP	*central venous pressure*
CXR	*chest x-ray*
D5/0.9	*5% dextrose and normal NaCl saline solution (0.9% NaCl)*
D5/1/2/NS	*5% dextrose and half normal saline solution (0.45% NaCl)*
D5W	*5% dextrose in water*
DBP	*diastolic blood pressure*
Derm	*dermatology*
DEXA	*dual-energy x-ray absorptiometry*
DFV	*Doppler flow velocimetry*
DHT	*dihydrotestosterone*
DI	*diabetes insipidus*
DIC	*disseminated intravascular coagulation*
DISIDA	*diisopropyl iminodiacetic (scan) acid (cholescintigraphy)*
DJD	*degenerative joint disease*
DKA	*diabetic ketoacidosis*
	dL deciliter
DMARD	*disease-modulating antirheumatic drug*

DNA	*deoxyribonucleic acid*
DRE	*digital rectal examination*
DSM-IV-TR	*Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, Text Revision*
DTR	*deep tendon reflexes*
DTs	*delirium tremens*
DVT	*deep vein thrombosis*
ECG	*electrocardiogram*
ECHO	*echocardiography*
ECMO	*extracorporeal membrane oxygenation*
ECT	*electroconvulsive therapy*
EEG	*electroencephalogram*
EENT	*eye, ear, nose, and throat*
EF	*ejection fraction*
EGD	*esophagogastroduodenoscopy*
ELISA	*enzyme-linked immunosorbent assay*
EMA-IgA	*immunoglobulin A antiendomysial*
EMG	*electromyography*
EMS	*emergency medical services*
Endo	*endocrine*
EP	*extrapyramidal*
EPS	*extrapyramidal symptoms*
ER	*extended-release*
ERCP	*endoscopic retrograde cholangiopancreatography*
ESR	*erythrocyte sedimentation rate*
ESRD	*end-stage renal disease*
ESWL	*extracorporeal shock wave lithotripsy*
ET-1	*endothelin-1*
ETOH	*ethal alcohol*
F and E	*fluid and electrolyte*
FAP	*familial adenomatous polyposis*
FBS	*fasting blood sugar*
FDA	*U.S. Food and Drug Administration*
FFP	*fresh frozen plasma*
FHT	*fetal heart tone*
FISH	*luorescence in situ hybridization*
G, g, gm	*gram*
GABA	*gamma-aminobutyric acid*
GABAB	*gamma-aminobutyric acid type B*
GABRB3	*GABAA receptor gene*
GB	*Guillain-Barré*
GERD	*gastroesophageal reflux disease*
GFR	*glomerular filtration rate*
GGT	*gamma-glutamyl transferase*
GH	*growth hormone*
GI	*gastrointestinal*
GnRH	*gonadotropin-releasing hormone*
GTT	*glucose tolerance test*
GU	*genitourinary*
GVHD	*graft-versus-host disease*
H&H	*hematocrit and hemoglobin*
H1N1	*hemagglutinin type 1 and neuraminidase type 1*
H2	*histamine 2*
H5N1	*hemagglutinin type 5 and neuraminidase type 1*
HAART	*highly active antiretroviral therapy*

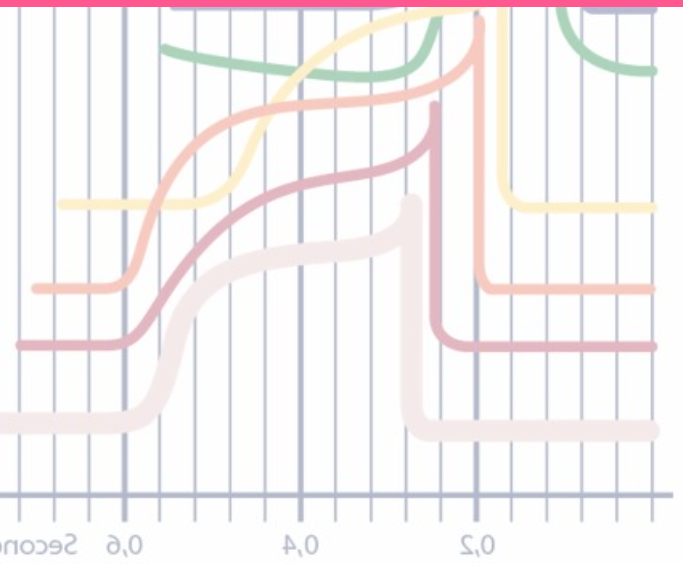
HAV	*hepatitis A*
HBV	*hepatitis B*
HCP	*health-care professional*
Hct	*hematocrit*
HCV	*hepatitis C*
HDL	*high-density lipoproteins*
HDV	*hepatitis D*
HELLP	*hemolysis, elevated liver enzymes, low platelets*
HEPA	*high-efficiency particulate air*
HER2	*human EGF (epidermal growth factor) receptor 2*
HEV	*hepatitis E*
Hgb	*hemoglobin*
HGSIL	*high-grade squamous intraepithelial lesion*
HIDA	*hepatobiliary iminodiacetic (scan) acid (cholescintigraphy)*
HIV	*human immunodeficiency virus*
HLA	*human leukocyte antigen*
HOB	*head of bed*
HPV	*human papillomavirus*
HR	*heart rate*
HRT	*hormone replacement therapy*
HTN	*hypertension*
HSIL	*high-grade squamous intraepithelial lesion*
HSV	*herpes simplex virus*
I&O	*intake and output*
ICD	*implantable cardioverter defibrillator*
ICP	*intracranial pressure*
ICS	*intercostal space*
IDM	*infants of diabetic mothers*
IgE	*immunoglobulin E*
IgG	*immunoglobulin G*
IL-1	*interleukin 1*
IL-8	*interleukin 8*
INR	*international normalized ratio*
IOL	*intraocular lens*
IOP	*intraocular pressure*
IVP	*intravenous pyelogram*
JNC 7	*The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure*
K+	*potassium*
KOH	*potassium hydroxide*
KS	*Karposi's sarcoma*
KUB	*kidney-ureter-bladder*
LDH	*lactate dehydrogenase*
LDL	*low-density lipoprotein*
LEEP	*loop electrosurgical excision procedure*
LFT	*liver function tests*
LLQ	*left lower quadrant*
LOC	*level of consciousness*
LP	*lumbar puncture*
LR	*lactated Ringer's (solution)*
LSIL	*low-grade squamous intraepithelial lesion*
LVAD	*left ventricular assist device*
MAO-B	*monoamine oxidase-B*
MELD	*Model for End-Stage Liver Disease*
MG	*myasthenia gravis*

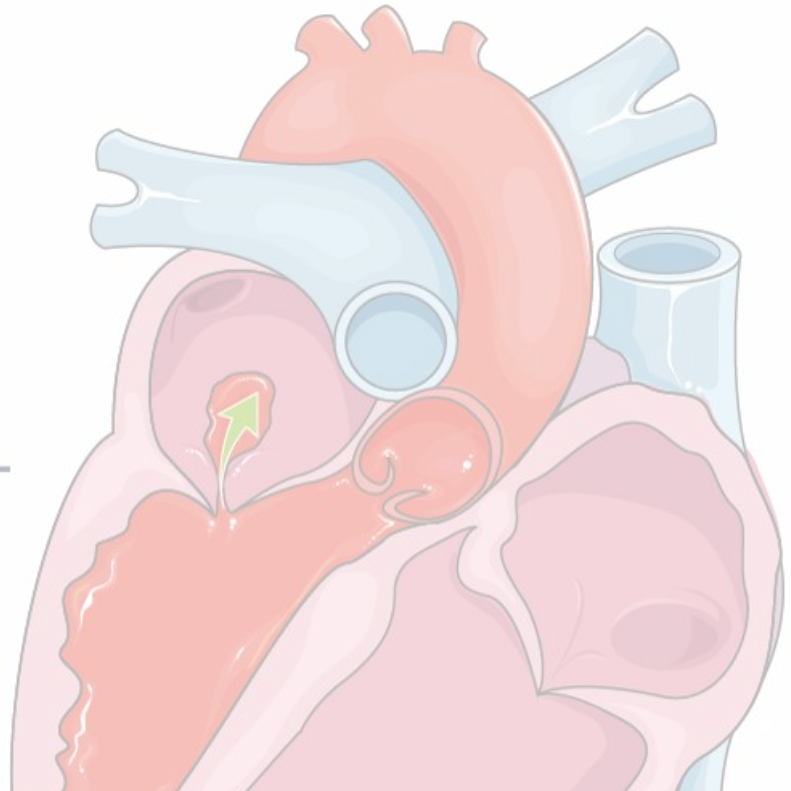
Mg+	magnesium
MgSO4	magnesium sulfate
MI	myocardial infarction
MM	multiple myeloma
MRgFUS	MR-guided focused ultrasound surgery
MRI	magnetic resonance imaging
NAA	nucleic acid amplification
NG	nasogastric
NGT	nasogastric tube
NK	natural killer
NMDA	N-methyl D-aspartate
NMJ	neuromuscular junction
NMS	neuroleptic malignant syndrome
NPO	nil per os (nothing by mouth)
NSAIDs	nonsteroidal antiinflammatory drugs
O2	oxygen
OCD	obsessive-compulsive disorder
OmpC	outer membrane porin C
ORIF	open reduction with internal fixation
OSHA	Occupational Safety and Health Administration
OTC	over-the-counter
PA	placenta abruption
PABA	para-aminobenzoic acid
PaCO2	partial pressure of carbon dioxide in alveolar gas
PAD	peripheral arterial disease
P-ANCA	perinuclear antineutrophil cytoplasmic antibody
PAO2	alveolar oxygen partial pressure
Pap	Papanicolaou
PCOS	polycystic ovarian syndrome
PCR	polymerase chain reaction
PD	Parkinson's disease
PD	peritoneal dialysis
PDA	patent ductus arteriosus
PE	pulmonary embolism
PEEP	positive end-expiratory pressure
PET	positron emission tomography
PFT	pulmonary function test
pH	potential of hydrogen
PIH	pregnancy-induced hypertension
PIPIDA	99mTc-para-isopropylac-(scan) etanilido-iminodiacetic acid (cholescintigraphy)
PND	paroxysmal nocturnal dyspnea
PP	placenta previa
PRBCs	packed red blood cells
PSA	prostate-specific antigen
PSV	peak systolic velocity
PT	prothrombin time
PUBS	percutaneous umbilical blood sampling
PUVA	psoralen ultraviolet A
PVC	premature ventricular contraction
PVR	peripheral vascular resistance
QFT-G	QuantiFERON-TB Gold
R/O	rule out
RA	rheumatoid arthritis
RAIU	radioactive iodine uptake
RBC	red blood cell
RD	Raynaud's disease

RF	rheumatoid factor
RFT	renal function tests
RLQ	right lower quadrant
ROM	range of motion
RSV	respiratory syncytial virus
RUQ	right upper quadrant
SA	sinoatrial
SAD	seasonal affective disorder
SARS	severe acute respiratory syndrome
SBP	systolic blood pressure
SCI	spinal cord injury
SDAT	senile dementia of the Alzheimer type
SERM	selective estrogen receptor modulator
SGA	small-for-gestational-age
SIADH	syndrome of inappropriate diuretic hormone
SJS	Stevens-Johnson syndrome
SLE	systemic lupus erythematosus
SNS	sympathetic nervous system
SOB	shortness of breath
SPECT	single-photon emission computed tomography
SPF	skin protection factor
SSRI	selective serotonin reuptake inhibitor
STD	sexually transmitted disease
T3	triiodothyronine
T4	tetraiodothyronine
T6	thoracic nerve pair 6
TB	tuberculosis
TEE	transesophageal echocardiogram
TEN	toxic epidermal necrolysis
TENS	transcutaneous electrical nerve stimulation
TG	thyroglobulin
THR	total hip replacement
TKR	total knee replacement
TN	trigeminal nerve
TNF	tumor necrosis factor
TNF-I	tumor necrosis factor inhibitors
TNF-α	tumor necrosis factor alpha
TNM	tumor-node-metastasis
TPN	total parenteral nutrition
TPO	thyroid peroxidase
TRAP	tremor, rigidity, akinesia criteria or postural instability bradykinesia, and postural instability
TSH	thyroid-stimulating hormone
tTG	antitransglutaminase
TUMA	transurethral microwave antenna
TURP	transurethral resection of the prostate
UC	ulcerative colitis
US	ultrasound
UTI	urinary tract infection
UV	ultraviolet
V/Q	ventilation/perfusion
VF	ventricular fibrillation
VT	ventricular tachycardia
WBC	white blood cell



Cardiovascular System Disorders





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Clinical Medicine Flashcards

- Clinical Clues to Diagnosis
- Pathophysiology

- Angina Pectoris
- Aortic Aneurysm
- Aortic Stenosis
- Atrial Fibrillation
- Buerger’s Disease
- Cardiogenic Shock
- Cardiomyopathy
- Congestive Heart Failure
- Coronary Artery Disease
- Deep Vein Thrombosis
- Graft-Versus-Host Disease
- Hypertension
- Leukemia
- Metabolic Acidosis
- Metabolic Alkalosis
- Multiple Myeloma
- Myocardial Infarction
- Myocarditis
- Pericarditis
- Peripheral Artery Disease
- Raynaud’s Disease
- Respiratory Acidosis
- Respiratory Alkalosis
- Rheumatic Endocarditis
- Varicose Veins
- Venous Stasis Ulcer
- Ventricular Fibrillation
- Ventricular Tachycardia

1 Angina Pectoris

- Chest pain referred to the jaw, neck, upper arms, and scapulae that is usually associated with activity, cold weather exercise, or smoking.
- Usually subsides with rest.

Pathophysiology

- The coronary arteries that feed the heart muscle become occluded with atherosclerotic plaque. Increased oxygen demands cannot be met because of narrowing and noncompliance to dilation. Ischemic pain results and is referred to the jaw, inner upper arms, sternum, and between the scapulae.
- Causative events include the 4 Es—eating a large meal, excitement, environment (very cold or very hot), and exercise—as well as smoking.
- Types include stable angina; variant angina (Prinzmetal's), unstable angina, which can easily lead to MI; and silent ischemia, usually experienced by older adults, that damages the heart without pain.

2 Aortic Aneurysm

- Abdominal pain, nausea, or fullness relieved by position change.
- Pulsating mass in the abdomen.
- Auscultation with the bell of the stethoscope for a bruit adjacent to the umbilicus.

Pathophysiology

- Bulging or ballooning of the aorta due to atherosclerosis, hypertension, chronic obstructive pulmonary disease, smoking, trauma, or congenital anomaly. Commonly found in the abdominal aorta (abdominal aortic aneurysm [AAA]). Tends to run in families with Marfan's syndrome.
- Types include fusiform, saccular, and dissecting.
- May be completely asymptomatic until it ruptures.

3 Aortic Stenosis

- Presence of a loud, harsh midsystolic, crescendo–decrescendo murmur that radiates to the side of the neck and down the left sternal border or apex.
- Heard loudest at the second right ICS.
- Low BP,
- Fatigue,
- Dizziness &
- Chest pain.

Pathophysiology

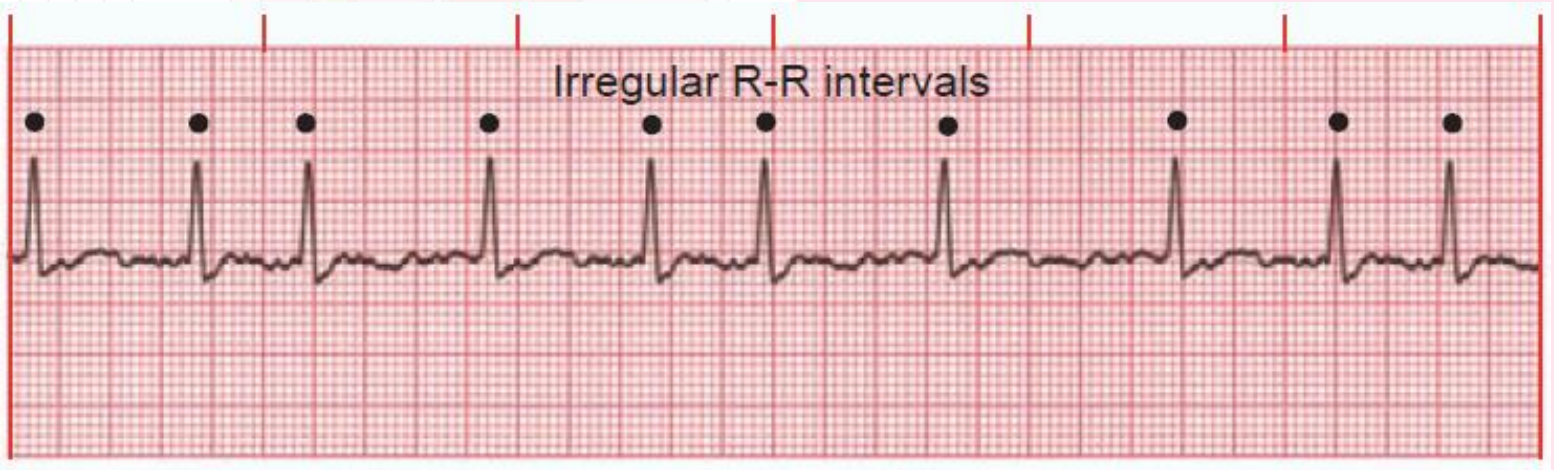
- AS develops from thickening, scarring, calcification, vegetation, or fusing of the flaps of the valve.
- Left ventricular hypertrophy occurs as the sympathetic nervous system is activated to compensate for low cardiac output. When compensatory mechanisms fail, heart failure results.

4 Atrial Fibrillation

- Palpitations
- Skipping heartbeats
- Vertigo

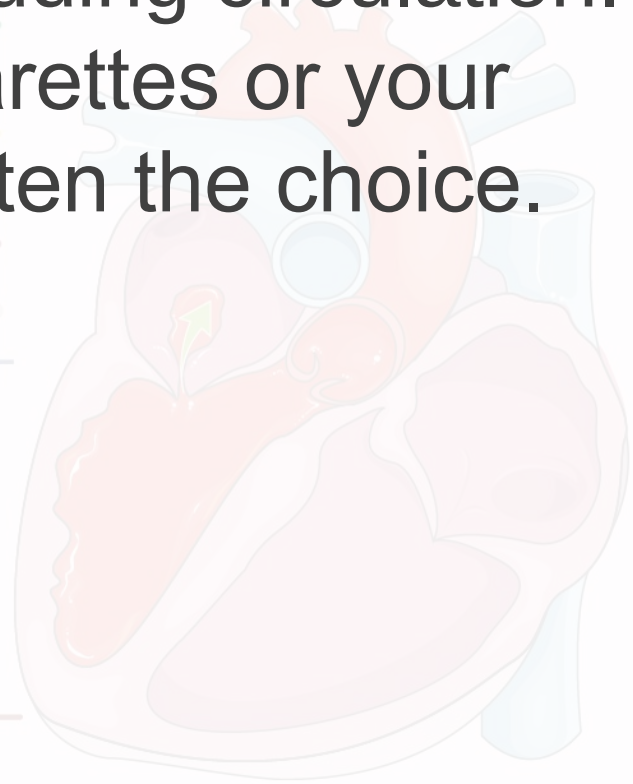
Pathophysiology

- Atrial fibrillation (AF), or quivering of the atria, is caused by repeated reentry of stimuli to the atrioventricular (AV) node.
- Loss of atrial kick.
- Stimulation of the sympathetic nervous system, as well as increasing age, illness (e.g., hyperthyroidism), and the stress of surgery may initiate AF.
- Types of AF include paroxysmal, persistent, permanent, and lone.



5 Buerger's Disease

- A disease of young men who smoke.
- Thrombi develop in the legs, occluding circulation.
- "Your cigarettes or your legs" is often the choice.

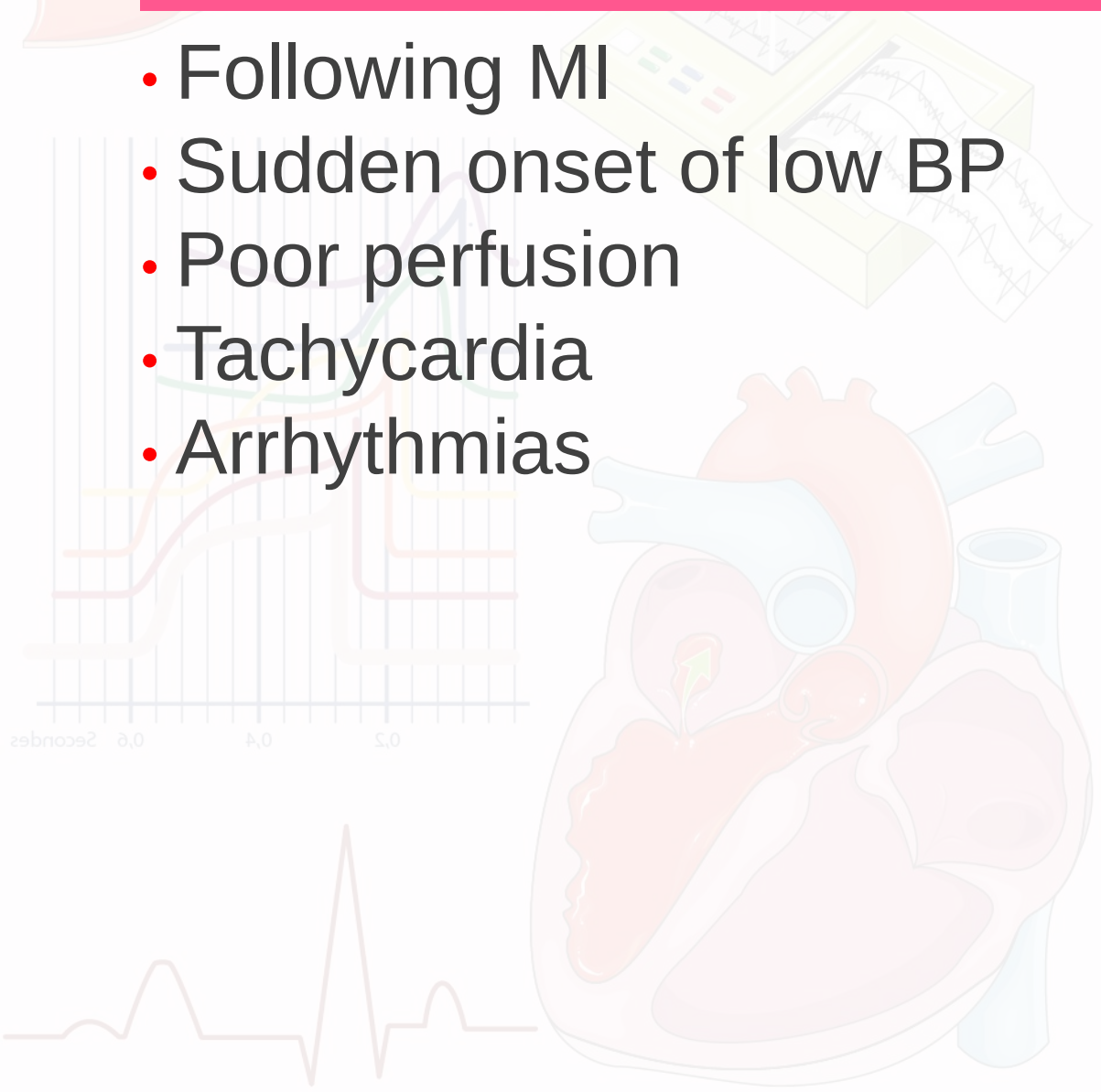


Pathophysiology

- BD also known as thromboangiitis obliterans is a disease of recurrent inflammation of the small and medium arteries of the legs that results in thrombus formation.
- Young men (aged 25–40) who smoke are affected. It is thought that substances in the tobacco products trigger an autoimmune response in these young men. Vasospasm and loss of arterial blood flow occurs.

6 Cardiogenic Shock

- Following MI
- Sudden onset of low BP
- Poor perfusion
- Tachycardia
- Arrhythmias



Pathophysiology

- AMI leads to decreased contractility of either the right or left ventricle, decreasing cardiac output to all body organ systems.
- CS may be caused by pericarditis and resulting cardiac tamponade.
- Stenosis of heart valves or sustained arrhythmia can cause CS.
- Drugs, used for preexisting hypertension, angina, or arrhythmias, may reach toxic levels and cause CS.

7 Cardiomyopathy

- Dyspnea
- Fatigue
- Edema of the ankles, and
- Possible atypical chest pain occurring with rest and not relieved with nitrates.
- MRI shows enlargement of the heart muscle or chambers.

Pathophysiology

- Enlargement of the heart muscle or chambers of the heart that causes heart failure.
- Major types: dilated and restrictive.
- Causes: Heredity, myocarditis, chronic alcohol or cocaine use, HIV, thiamine or zinc deficiencies, infections; or autoimmune disease.

8 Congestive Heart Failure

- Elevated BNP,
- Edema in the
- Extremities
- Shortness of breath
- Crackles and pleural effusion
- Jugular vein distention
- Hepatomegaly
- Splenomegaly

Pathophysiology

- The heart is a double pump. Any structural damage to the pump will cause heart failure.
- Left-sided heart failure causes backup of fluid in the lungs.
- Right-sided heart failure causes backup of fluid in the inferior and superior venae cavae.
- Preload becomes extensive and afterload is difficult to overcome because of ↑ PVR.

9 Coronary Artery Disease

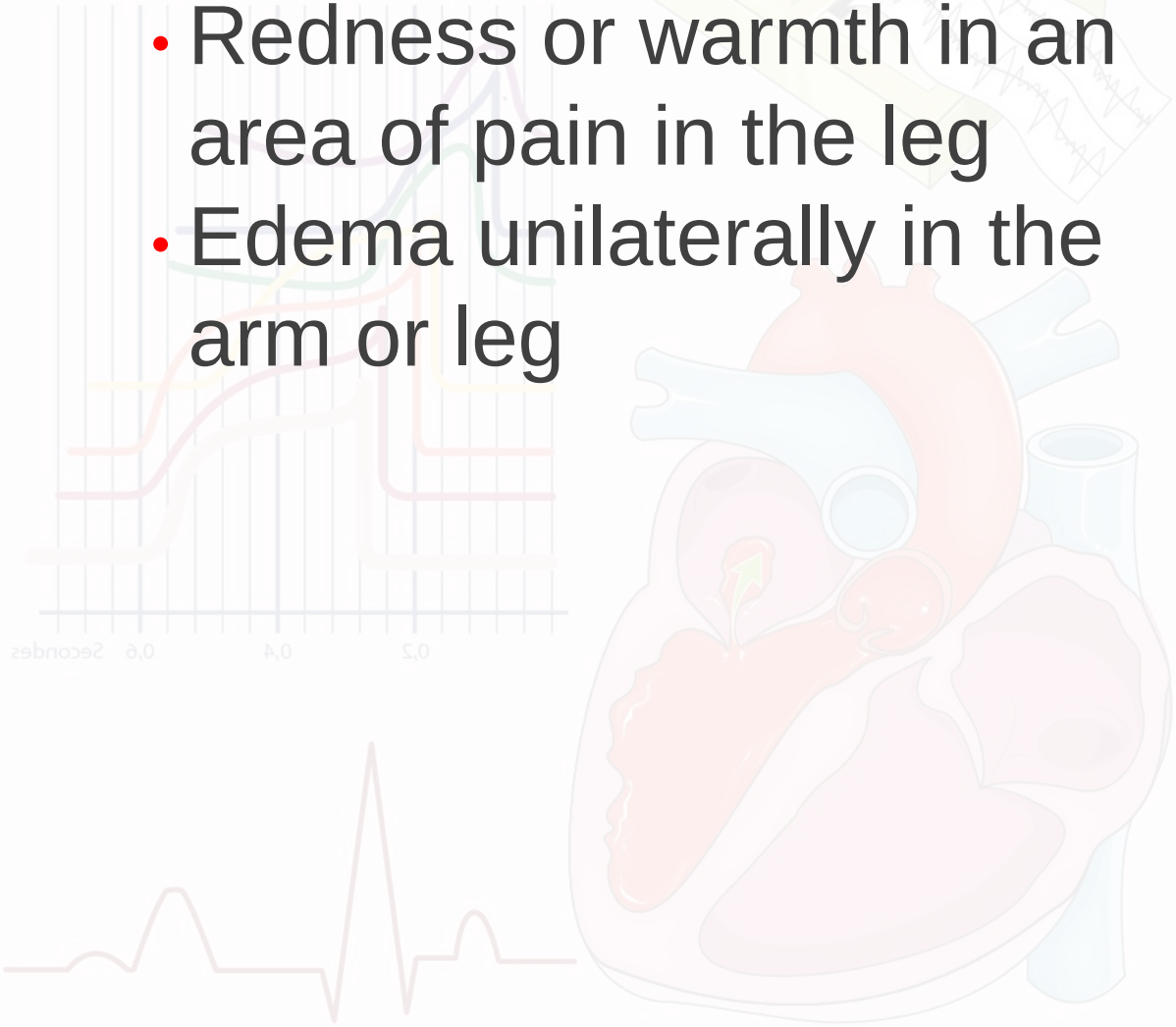
- Shortness of breath with activity in a client with risk factors for heart disease such as a history of
  - Elevated blood lipids
  - Smoking
  - Poor dietary habits
  - Sedentary lifestyle
  - Obesity

Pathophysiology

- CAD results in interruption of blood flow that can cause ischemia or infarction as a result of atherosclerosis.
- The inflammation attracts low-density lipoproteins (LDL) and binds them to the site. The triglyceride core of the LDLs is spilled into the underlayer of the intima. Macrophages envelop these fats and are now termed “foam cells.”
- This is the “fatty streak” seen in early stages of atherosclerosis. As the area enlarges, more LDL, macrophages, platelets, and smooth muscle fibers are drawn to the site and accumulate under the intima, narrowing the vessel.
- This causes reduced blood flow and higher blood pressure in the small coronary vessels.

10 Deep Vein Thrombosis

- Positive homans' sign
- Redness or warmth in an area of pain in the leg
- Edema unilaterally in the arm or leg



Pathophysiology

- Causes of DVT include venous stasis, vessel wall injury, and hypercoagulability. Perinatally, women are at increased risk because of excess clotting factors.
- Areas where blood flows more slowly, usually where veins are bending are more prone to DVT.
- Postsurgery clients are at greater risk due to ↓ activity.
- Septicemia resulting in hemolysis and dehydration can contribute to DVT.

11 Graft-Versus-Host Disease

- Approximately 31/2 months following solid organ, bone marrow, or stem cell transplant, damage to the epithelial cells of the skin, GI tract, and hepatocytes occurs from an immune attack initiated by the transplanted tissue.

Pathophysiology

- GVHD can occur following solid organ, bone marrow, or stem cell transplant. The graft cells recognize the host cells as foreign.
- Phase 1 of GVHD involves the host tissue that has been prepared for transplant by use of chemotherapy and radiation therapy. The injured tissue releases cytokines, which stimulate the host's CD4+ cells.
- In phase 2 of GVHD, activated CD4+ cells cause the graft to activate T killer cells and NK cells that mount an immune response against susceptible tissues of the host (epithelial tissue, GI tract, and hepatocytes).
- In phase 3 of GVHD, immune cells and cytokines begin to damage host tissues.

12 Hypertension

- BP readings of greater than 119 mm Hg systolic or greater than 79 mm Hg diastolic classify the client as prehypertensive.
- The client may have no symptoms or, in severe cases, headache and nosebleed.

Pathophysiology

- BP is determined by CO, which is determined by heart rate multiplied by the stroke volume. The heart rate can be affected by stimulation of the SNS responding to arterial baroreceptors that measure BP and by chemoreceptors that measure CO2 levels. Other mechanisms that alter BP include the renin-angiotensin-aldosterone system, exercise, emotions, and taking medications that cause vasoconstriction. High blood pressure damages the intima of arteries, making way for infiltration of macrophages, muscle fibers, cholesterol, and fatty acids that form atherosclerotic plaque.
- PVR is the resistance to blood flow through arterioles creating a high afterload.

13 Leukemia

- Low-grade fever
- Lymphadenopathy
- Bleeding tendency
- Infections
- Anemia.
- Bone marrow biopsy shows many immature WBCs.

Pathophysiology

- Leukemia can be acute or chronic and affect lymphocytes, monocytes, granulocytes, erythrocytes, and platelets. Due to a mutation in the stem cells of the bone marrow, immature WBCs (blasts), proliferate uncontrollably in the bone marrow, lymph tissue, and spleen. In the bone marrow, the immature and ineffective WBCs crowd the normal WBCs, RBCs, and platelets, greatly reducing their number.
- Types include ALL, AML, CLL, CML.

14 Metabolic Acidosis

- ABG shows pH of less than 7.35,
- PCO2 in the range of 35–45 mm Hg or decreasing to compensate, and
- HCO3_ of less than 22 mEq/L.

Pathophysiology

- Normal pH of the body is 7.35–7.45. ABG analysis diagnoses metabolic acidosis; pH is low, CO2 is within normal range or decreasing to compensate, and HCO3_ is low.
- Buffering systems are initiated by the body when the pH goes out of range. The first to react are cellular buffers. In metabolic acidosis, H+ are absorbed into the cells, causing a shift of K+ into the extracellular area.
- The lungs are the second buffering system to activate. When pH is low, CO2 is released through rapid and deep respirations.The kidneys are the last buffering system to activate; and it may take as long as 1–2 days for them to begin to affect pH. In metabolic acidosis, the kidneys secrete H+.
- Causes include diarrhea (loss below the waistlose base), CRF, lactic acidosis, salicylate poisoning, methanol and alcohol poisoning, paraldehyde poisoning, and diabetic ketoacidosis.

15 Metabolic Alkalosis

- ABG shows pH of greater than 7.45,
- PCO2 in the range of 35–45 mm Hg or rising to compensate, and HCO3_ of greater than 26 mEq/L.

Pathophysiology

- Normal pH of the body is 7.35–7.45. The ABG diagnoses metabolic alkalosis, pH is high, CO2 is within normal range or increasing to compensate, and HCO3_ is high.
- Buffering systems are initiated by the body when the pH goes out of range. The first to react are cellular buffers. In metabolic alkalosis, H+ are released from the cells, causing a shift of potassium ions (K+) into the cells.
- The lungs are the second buffering system to activate. When pH is high, CO2 is held by slow, shallow respirations.
- The kidneys are the last buffering system to activate, and it may take as long as 1–2 days for them to begin to affect pH. In metabolic alkalosis, the kidneys hold H+.
- Causes include persistent vomiting; gastrointestinal suction; diarrhea; and use of loop diuretics, antacids, licorice, glucocorticoids, and mineralocorticoids.

16 Multiple Myeloma

- Pathologic fractures from severe osteoporosis
- Bleeding tendency
- Infections
- Anemia affecting those in the fifth to seventh decades of life.

Pathophysiology

- Mutation of plasma cells (type of B-lymphocyte) that infiltrate the bone marrow, bone tissue, liver, spleen, lymph nodes, lungs, adrenal glands, kidneys, skin, and GI tract.
- MM has a poor prognosis.

17 Myocardial Infarction

- Severe chest pain that refers to the jaw, upper arms, neck, and scapula and is described as “crushing.”
- Accompanied by shortness of breath, elevated BP, and sweating.

Pathophysiology

- When blood flow diminishes to the heart muscle, the sympathetic nervous system is activated, raising the blood pressure and heart rate. This increases the oxygen and glucose needs of the cardiac cells.
- Cardiac necrosis from lack of perfusion occurs centrally, surrounded by varying levels of ischemic tissue radiating outward from the site.
- Necrotic cardiac tissue will never resume its prior ability to contract but rather will form scar tissue.
- Damage can occur to the pacing system of the heart, causing lethal arrhythmias.

18 Myocarditis

- Fever,
- Chest pain, and
- Activity Intolerance.

Pathophysiology

- The myocardium is infiltrated by inflammatory cells leading to necrosis of muscle cells and fibrosis.
- Causes include viral, bacterial, protozoan, and fungal infections.
- Inflammatory and autoimmune causes or exposure to chemicals or toxins, and radiation therapy.
- Women who are pregnant, those undergoing radiation therapy to the chest area, and the elderly are also at risk.

19 Pericarditis

- Pericardial friction rub.
- Substernal radiating chest pain that increases in intensity with deep inspiration or lying flat.
- Pain is somewhat relieved by sitting upright and leaning forward.
- CBC and ESR may indicate inflammation or infection is present.

Pathophysiology

- Pericarditis is an inflammation of the pericardial sac. The pericardial sac is a fibrous tissue layer that surrounds the heart. Under normal circumstances, it contains and is bathed with approximately 25–50 mL of serous fluid. In pericarditis, the volume may increase to 1,500 mL.
- Many diseases, conditions, and drugs can inflame the pericardial sac.
- Hemopericardium may be caused by trauma and in-hospital procedures.

20 Peripheral Arterial Disease

- Symptoms occur late in the disease and include intermittent claudication in the calves associated with activity.
- Color changes in the legs, with hair loss and dry, flaky skin, may occur.

Pathophysiology

- PAD is caused by progressive narrowing of the lumen of the arteries by atherosclerotic plaque buildup.
- If arteries are totally occluded, necrosis and ulceration (gangrene) develop, and the limb is no longer viable.

21 Raynaud's Disease

- Vasospasm and vasoconstrictive ischemia of the tips of the nose, fingers, hands, feet, and toes when in contact with cold objects or cold temperatures.

Pathophysiology

- A disease of women, RD causes vasospasm and vasoconstrictive ischemia of the tips of the nose, fingers, hands, feet, and toes when in contact with cold objects or cold temperatures. Ischemia is followed by a period of hyperemia. Diagnosis is made when the ischemic attacks occur for 2 or more years.
- Endothelin 1 and angiotensin may be causative agents.
- Secondary RD is associated with autoimmune/ collagen disorders and persons with occupations that involve vibratory tools like jackhammers.

22 Respiratory Acidosis

- ABG shows pH of less than 7.45,
- PCO2 of greater than 45 mm Hg, and HCO3_ within range or rising to compensate.

Pathophysiology

- Normal pH of the body is 7.35–7.45. The ABG analysis diagnoses respiratory acidosis; pH is low, CO2 is high, and HCO3_ is within normal range or rising to compensate.
- Buffering systems are initiated by the body when the pH goes out of range. The first to react are cellular buffers. In respiratory acidosis, H+ are absorbed into the cells, causing a shift of K+ out of the cells.
- The lungs are the second buffering system to activate. When pH is low, CO2 is released through rapid and deep respirations.
- The kidneys are the last buffering system, and it may take as long as 1–2 days for them to begin to affect pH. In respiratory acidosis, the kidneys secrete H+.
- Causes include COPD, hypoventilation, sleep apnea, and drug use that suppresses respiratory function..

23 Respiratory Alkalosis

- ABG shows pH of greater than 7.45,
- PCO2 of less than 35 mm Hg, and
- HCO3_ within the range of 22–26 mEq/L or decreasing to compensate.

Pathophysiology

- Normal pH of the body is 7.35–7.45. The ABG analysis diagnoses respiratory alkalosis; pH is high, CO2 is low, and HCO3_ is within normal range or decreasing to compensate. Buffering systems are initiated by the body when the pH goes out of range. The first to react are cellular buffers. In respiratory alkalosis, H+ are released from the cells, causing a shift of K+ into the cells.
- The lungs are the second buffering system to activate. When pH is high, CO2 is held by slow, shallow respirations.
- The kidneys are the last buffering system to activate, and it may take as long as 1–2 days for them to begin to affect pH. In respiratory alkalosis, the kidneys hold H+.
- Causes include pain, anxiety, fever, CVA, tumor, and trauma.

24 Rheumatic Endocarditis

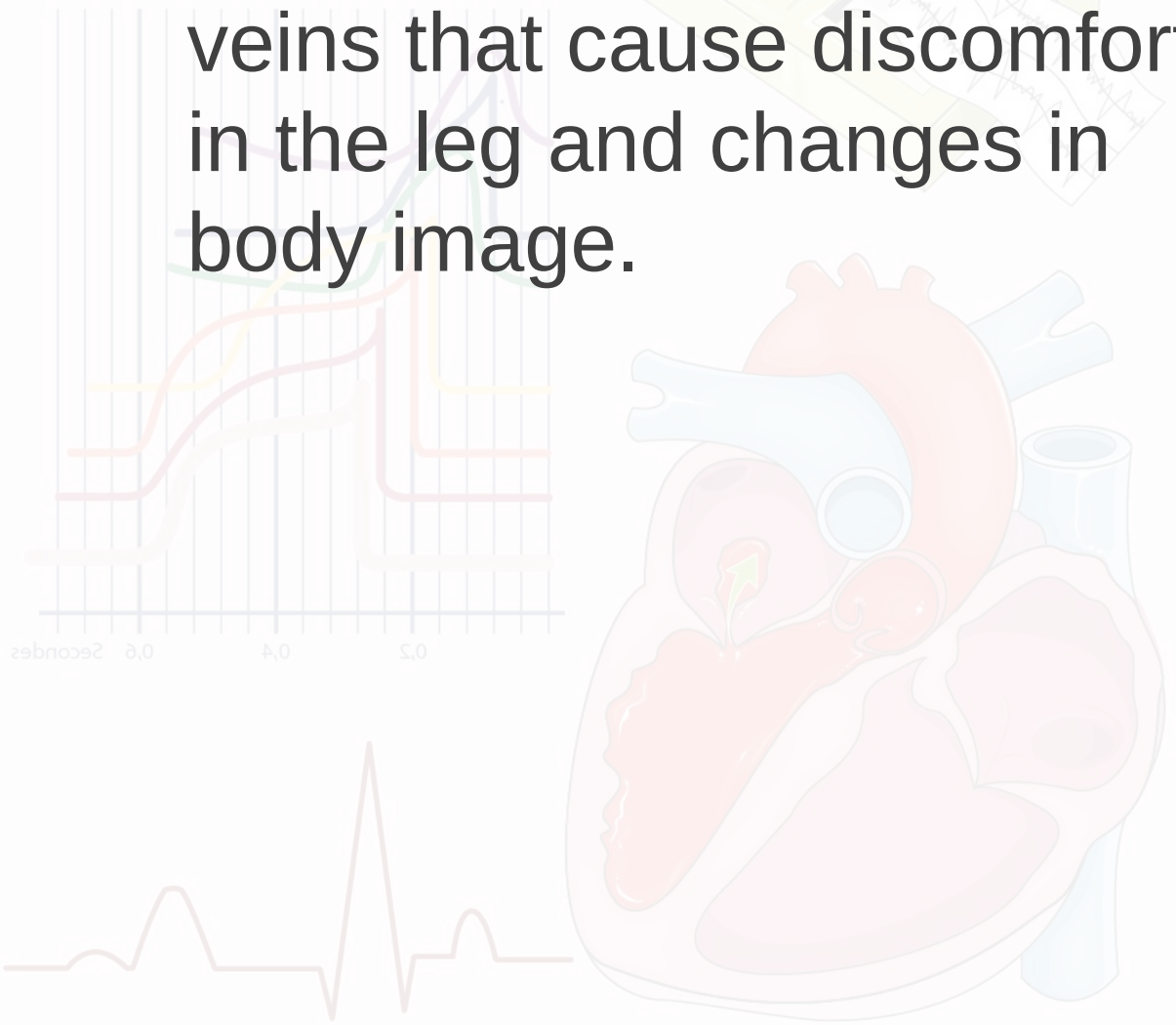
- Fever
- Chest pain
- Dyspnea
- Cough
- Arthritic symptoms
- Chorea and
- Ankle edema develop 2–3 weeks after strep. Throat (beta-hemolytic streptococci).

Pathophysiology

- BHS that cause throat infection or impetigo travel to the bloodstream, causing bacteremia. The BHS infect the heart typically 2–3 weeks after the initial infection. May occur in clients in childhood and recur as rheumatic endocarditis at any age.
- All layers of the heart are affected, with generalized inflammation of all heart structures.
- The endocardium is affected by vegetation deposited on the valves.
- The end result of cardiac structural anomalies is CHF.

25 Varicose Veins

- Visible, tortuous, bulging veins that cause discomfort in the leg and changes in body image.



Pathophysiology

- Venous return in the body is dependent on the muscular contractions of the skeletal muscle pump. Competency of the valves within the veins cause forward flow that is eventually returned to the heart.
- In pregnancy, the pressure of the fetus causes venous hypertension, and hormones make the valves less competent, which ↑ incidence of varicose veins of the legs and anus to occur.
- Superficial varicosities are more visible than more deeply located varicosities.

26 Venous Stasis Ulcer

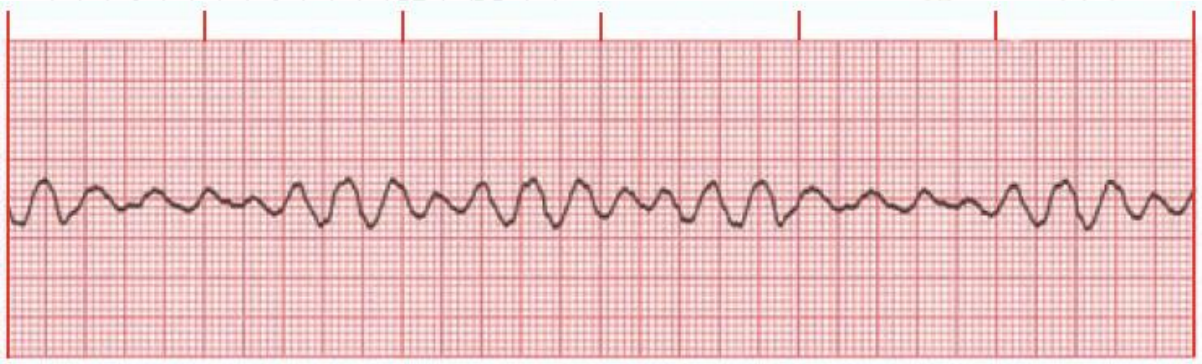
- Ulcer that occurs on the lower extremities in the presence of edema and brown, leathery skin.
- Described as “wet” and exudes a large amount of serous fluid.

Pathophysiology

- Blood is not returned efficiently to the heart and venous pressure ↑ in the lower extremities. The ↑ venous pressures cause backflow of blood into the capillary exchange beds and leakage of serous fluid containing wastes into the interstitial space.
- Edema in the interstitial space prevents capillary access for all cells and can be severe.
- Increased pressure in a vein causes a small rupture that becomes a deeper wound that cannot heal because of poor capillary access to inflammatory agents, oxygen, and glucose. The wound ulcerates because of inflammatory substances trapped in the subcutaneous tissue, damaging the valves in the veins and exuding serous fluid.

27 Ventricular Fibrillation

- Loss of consciousness,
- No peripheral pulses or blood pressure.



Pathophysiology

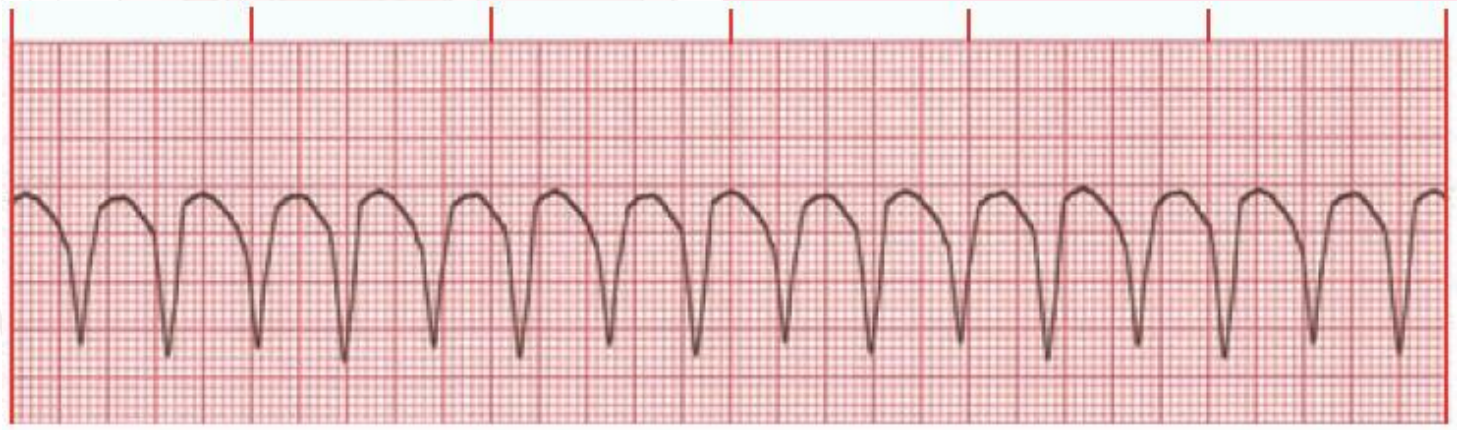
- VF is associated with CAD, MI, and structural or inflammatory cardiac conditions. It may be precipitated by antiarrhythmic drug administration, atrial fibrillation, cardioversion, and hypoxic states.
- VF causes include hyperkalemia and hypomagnesemia, cardiac catheterization and placement of pacemaker wires.
- Congenital conditions that predispose to VF include Marfan’s syndrome, tetralogy of Fallot, Kawasaki’s disease, long QT syndrome, and Wolff-Parkinson-White syndrome also predispose to VF.

28 Ventricular Tachycardia

- Client may be lightheaded
- Unconscious and
- Pulseless.

Pathophysiology

- In ventricular tachycardia (VT), the ventricles replace the sinoatrial (SA) node as the pacemaker of the heart.
- PVCs often precede VT.
- VT may be caused by MI, myocardial irritability, and cardiomyopathy.
- Abnormally low levels of K+, Ca++, and Mg+; digoxin toxicity; RA, SLE, and respiratory acidosis.
- Cardiac catheterization and pacing wires.



Musculoskeletal System Disorders

Clinical Medicine Flashcards

- Clinical Clues to Diagnosis
- Pathophysiology

Women's Health and Perinatal Disorders

Clinical Medicine Flashcards

- Clinical Clues to Diagnosis
- Pathophysiology

Dermatologic System Disorders

Clinical Medicine Flashcards

- Clinical Clues to Diagnosis
- Pathophysiology

Mental Health Disorders

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Clinical Medicine Flashcards

- Clinical Clues to Diagnosis
- Pathophysiology

- Alcoholism
- Attention Deficit-Hyperactivity Disorder (ADHD)
- Borderline Personality Disorder
- Conversion Disorder
- Depression
- Mania
- Bipolar Disease
- Dissociative Amnesia
- Generalized Anxiety Disorder
- Obsessive-Compulsive Disorder
- Panic Disorder
- Phobias
- Posttraumatic Stress Disorder
- Schizophrenia

1 Alcoholism

- Smell of alcohol on breath
- Ataxia
- Slurred speech
- Inappropriate affect; or shaking if abstinent

Pathophysiology

- Alcoholism is genetically linked.
- Alcohol is very lipid-soluble and enters the brain easily. Once there, it acts on GABA receptors, promoting a depressant and pleasurable effect. The action of other drugs (e.g., heroin) on the opioid and dopaminergic centers is similar to that of alcohol, cross-addictions occur.

2 Attention Deficit-Hyperactivity Disorder (ADHD)

- Child or adult with
  - Difficulty focusing
  - Finishing projects
  - Listening to instructions and
  - Sitting still who also shows emotional lability

Pathophysiology

- PET scans show decreased metabolic activity in the frontal lobes and basal ganglia; EEG readings show ↓ wave activity in the same area.
- PET scans show ↑ metabolism in the primary sensory and sensorimotor areas. There is no specific lesion. ADHD is believed to be an error in myelination.
- Affects boys and men more than girls and women.
- Inability to wait, impatience, bursts of anger, and an inability to sit still; difficulty finishing projects, focusing, and following directions and often appears to be staring off into space.

3 Borderline Personality Disorder

- Substance abuse; impulsive, “needy” behavior.
- Self-destructive behavior (suicide attempts) for attention.

Pathophysiology

- The personality develops as a normal part of neurophysiology, coupled with environmental factors. Components of the client’s genetic framework react to what is external, creating the outer and inner persona.
- Changes in the prefrontal cortex may be responsible for the personality changes exhibited by those with personality disorders. Affects women more than men.

4 Conversion Disorder

- Somatization of anxiety that results in paralysis, blindness, or other physical symptoms for which no medical explanation can be found.
- The client seems indifferent to the loss of function.

Pathophysiology

- A somatoform disorder in which neurologic symptoms (e.g., blindness, paralysis, loss of touch) may occur as a result of anxiety. According to the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, Text Revision (DSM-IV-TR), symptoms cannot be intentional or explained by any medical tests.
- Impulses to the brain are misinterpreted or rerouted by an anxiety response, resulting in perceptual abnormalities. An anxiety- or stressproducing event precedes onset of the conversion disorder. Women are affected more than men.
- Neurotransmitters affected in this disorder are serotonin and norepinephrine.

5 Depression

- Persistent sadness hopelessness
- Feelings of guilt
- Inability to concentrate
- Decreased interest in daily activities
- Changes in appetite
- Insomnia or excessive sleep and
- Recurrent thoughts of death or suicide

Pathophysiology

- Changes in brain tissue metabolism and blood flow, particularly in the prefrontal cortex (decreased) and the amygdala (increased).
- Changes in the ability of receptors to bind with neurotransmitters (e.g., serotonin, norepinephrine); increase in reuptake of neurotransmitters before they can bind with receptors and increased destruction of neurotransmitters by monoamine oxidase, which deaminates serotonin and norepinephrine.
- Less ability to handle stress related to altered hypothalamus-pituitary-adrenal system.

6 Mania

- Mental disorder characterized by excessive excitement, restlessness, delusions of grandeur, and poor judgment.

Pathophysiology

- According to the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, Text Revision (DSM-IV-TR), the client must have experienced at least three persistent episodes of grandiose thoughts, excessive need to speak characterized by flight of ideas, decreased need for sleep, poor judgment, and irritability.
- Imbalance in levels of norepinephrine, serotonin, dopamine, and hormones.

7 Bipolar Disorder

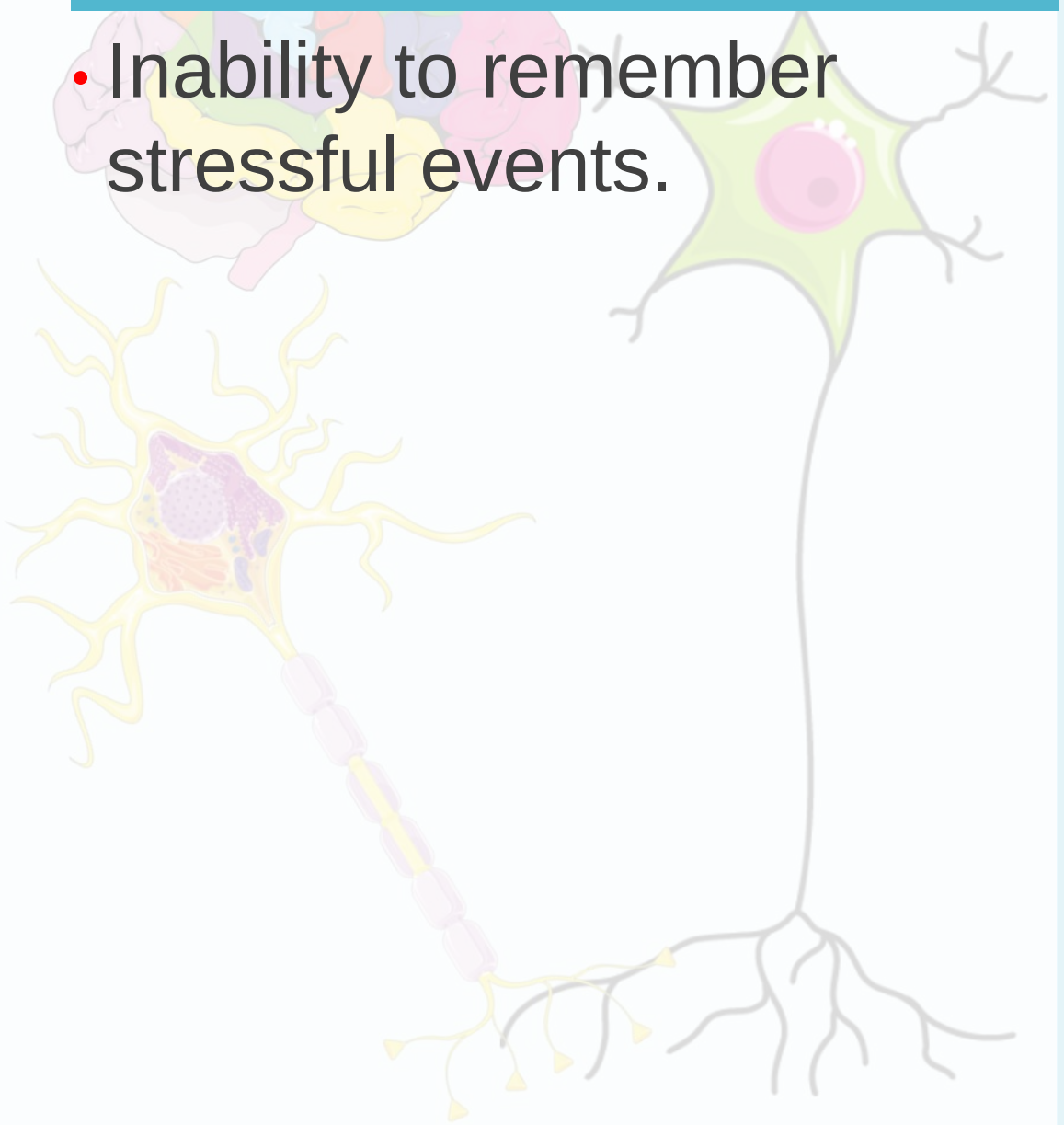
- Cycling through periods of depression and mania.
- Rapid cycling (four episodes per year) indicates a more severe illness.

Pathophysiology

- Changes in brain tissue metabolism and blood flow, particularly in the prefrontal cortex (decreased) and the amygdala (increased). Strong genetic link, and women are affected more than men.
- Imbalance in neurotransmitters. Epinephrine and norepinephrine are increased in the manic phase, and serotonin and norepinephrine are decreased in the depressive phase.
- Less ability to handle stress (hypothalamuspituitary- adrenal system).
- Sleep disturbances related to neurotransmitter imbalances.

8 Dissociative Amnesia

- Inability to remember stressful events.



Pathophysiology

- A dissociative disorder is caused by a traumatic occurrence. The areas of the brain associated with memory recall and storage (the limbic and hippocampal areas) may be traumatized by childhood events or by unbearable events later in life.
- According to the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, Text Revision (DSM-IV-TR), the client must have experienced at least two occurrences of amnesia for an event as well as impaired social or familial processes.
- Repression.

9 Generalized Anxiety Disorder

- Excessive worry or anxiety that cannot be controlled, causing interference with normal activities of daily living.
- Symptoms must have occurred for at least 6 months.

Pathophysiology

- Anxiety is produced by stimulation of the autonomic nervous system. Neurotransmitters involved in the anxiety response include gammaaminobutyric acid (GABA), serotonin, epinephrine, and norepinephrine. A prolonged, abnormal fight-or-flight response occurs to normal stimuli.

10 Obsessive-Compulsive Disorder

- Rituals are performed a specific number of times and in a specific sequence to decrease unpleasant thoughts.

Pathophysiology

- According to the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, Text Revision (DSM-IV-TR), an obsession involves recurrent, intrusive, and persistent thoughts, impulses, or images that cause excessive anxiety. The obsession is known to be irrational yet cannot be ignored. Attempts to suppress the obsession become rituals known as compulsions.
- The DSM-IV-TR defines a compulsion as a repetitive act or ritual.
- The client with obsessive-compulsive disorder (OCD) spends a great deal of time on the ritualistic behavior.
- There is a genetic predisposition for OCD.

11 Panic Disorder

- Sudden feeling of impending doom, going crazy, unreality, and fear accompanied by
- Palpitations
- Numbness of the arms
- Chest discomfort anddizziness

Pathophysiology

- Symptoms are recurrent.
- The cycle of panic is attributable to “fear of the fear.” Dreading an attack brings one on.
- Physical symptoms are related to the sympathetic and adrenal systems.
- Several hypotheses exist as to cause: a disorder in serotonin sensitivity, hypersensitivity to catecholamines, sensitivity to lactate, decreased inhibition to GABA, hypersensitivity in neuroanatomy producing abnormal signals for fight or flight, and genetics.

12 Phobias

- Irrational fear of an object, place, situation, thing, or person that causes avoidance behaviors.

Pathophysiology

- According to the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, Text Revision (DSM-IV-TR), phobia development is strongly associated with anxiety disorders. A phobia occurs when an object, place, situation, thing, or person causes a sympathetic nervous system (autonomic) response that results in anxiety. The trigger of anxiety becomes a phobia.
- A phobia can become so severe that all social contact is lost.
- A simple phobia is one associated with fear of common things (e.g., spiders, heights).

13 Posttraumatic Stress Disorder

- Acute anxiety and distress related to flashbacks or memories of a traumatic event.

Pathophysiology

- Severe psychological distress after traumatic events (e.g., war, criminal assault, accidents, natural disasters, rape).
- The amygdala of the brain is hyperactive in PTSD.
- Activation of the amygdala causes activation of the autonomic nervous system, and the adrenal system. The sympathetic nervous system produces many of the symptoms of PTSD, which are prolonged by the adrenal hormones.
- According to the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, Text Revision (DSM-IV-TR), symptoms must last at least 1 month. Onset may occur at any time after the traumatic event.

14 Schizophrenia

- Often described by the 4 As (autism, avolition, anhedonia, and associative looseness).
- Schizophrenia means “split mind,” with a chasm occurring between the client and the environment.
- High dopamine levels are present.

Pathophysiology

- The neurotransmitter dopamine is excessively abundant. Changes in brain metabolism.
- Genetic links are not as strong as once thought but still place relatives at greater risk of developing schizophrenia (onset adolescense; early adulthood).
- Alterations in perception and thought, including delusions (fixed thoughts) and hallucinations (auditory is the most common but can involve all the senses).
- Difficulty with expression of thought.

Respiratory System Disorders

Clinical Medicine Flashcards

- Clinical Clues to Diagnosis
- Pathophysiology

Nervous System Disorders

Clinical Medicine Flashcards

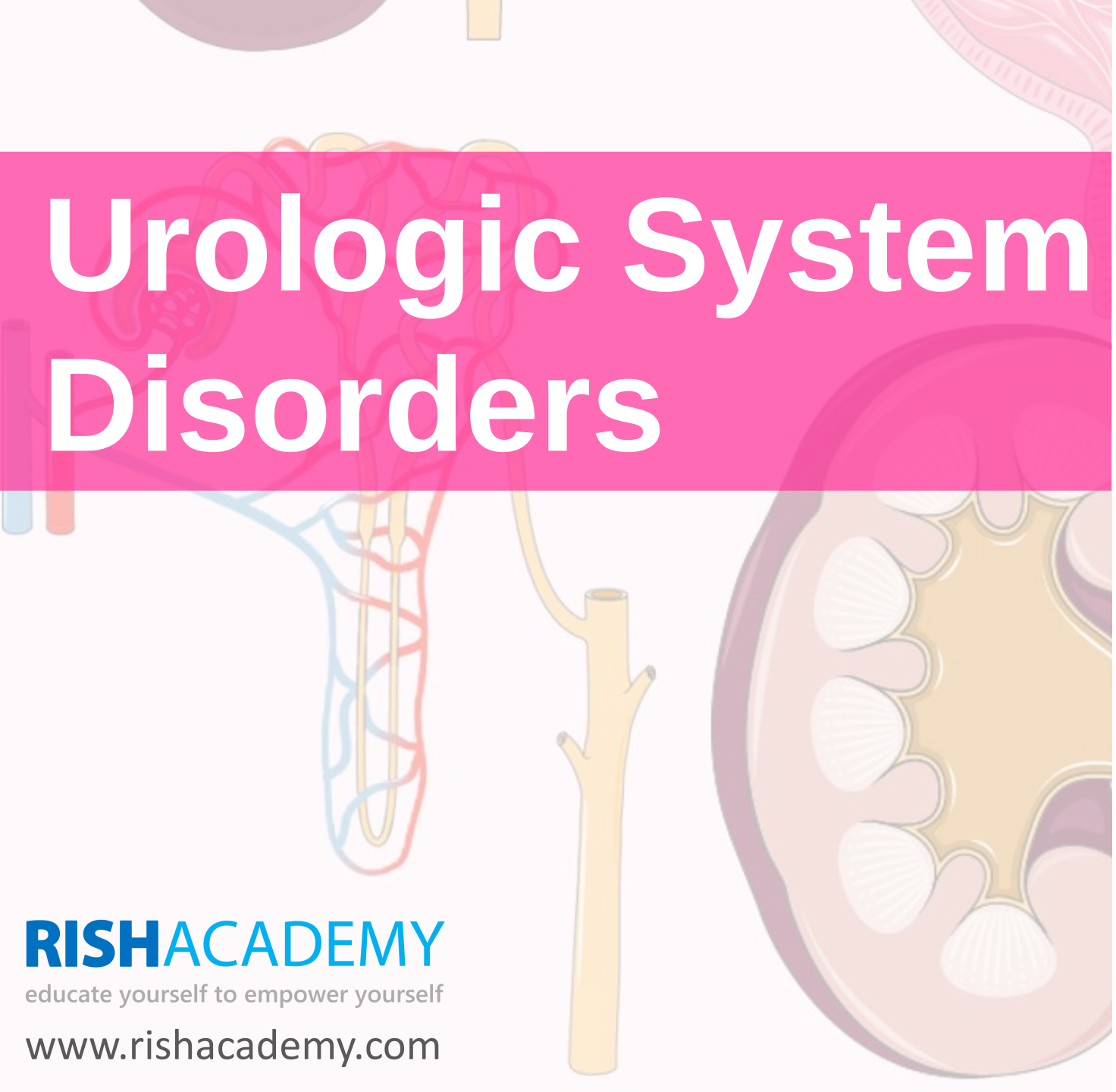
- Clinical Clues to Diagnosis
- Pathophysiology

Endocrine System Disorders

Clinical Medicine Flashcards

- Clinical Clues to Diagnosis
- Pathophysiology

Urologic System Disorders



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Clinical Medicine Flashcards

- Clinical Clues to Diagnosis
- Pathophysiology

- Acute Renal Failure
- Benign Prostatic Hyperplasia
- Bladder Cancer
- Chronic Renal Failure
- Epididymitis
- Glomerulonephritis
- Hydronephrosis
- Nephrotic Syndrome
- Overactive Bladder
- Polycystic Kidney Disease
- Prostate Cancer
- Pyelonephritis
- Renal Artery Stenosis
- Renal Calculus
- Rhabdomyolysis
- Urethritis
- Urinary Tract Infection

1 Acute Renal Failure

- Azotemia, anuria, or oliguria.
- Precipitated by severe hypotension, use of diagnostic contrast dyes, or structural damage to nephrons.
- Elevated K+ and decreased Na+ in serum.
- Elevated creatinine and BUN.

Pathophysiology

- Acute damage to nephrons associated with severe hypotension, use of contrast dyes, or damage to skeletal muscle fibers that accumulate in the nephron tubules.
- Three stages: The oliguric stage (less than 400 mL/24 hr), lasting 2 weeks (better prognosis) to several months (poor prognosis). The diuretic phase, characterized by a normal output of low-quality urine lasting up to a month. The recovery phase, which may last up to 1 year. The quality of urine in this phase improves, but full recovery is not guaranteed.
- Prerenal conditions are those that decrease perfusion of the kidneys. Intrarenal failure includes incidents that damage the nephrons.
- Postrenal failure is caused by obstruction, resulting in hydronephrosis.

2 Benign Prostatic Hyperplasia

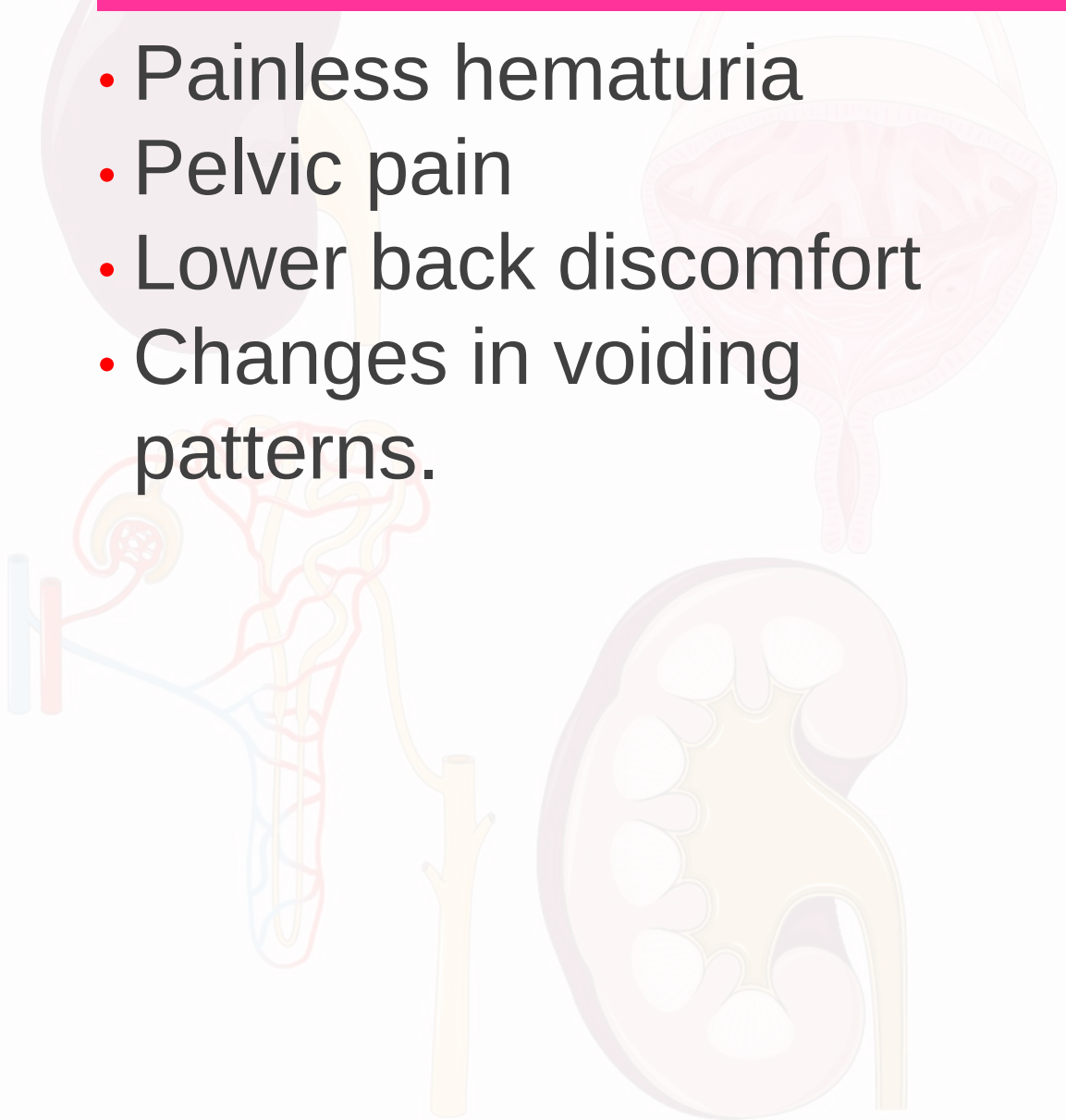
- Difficulty starting or maintaining urinary stream
- Dribbling of urine
- Urgency & frequency
- Men approaching or in the fifth decade of life.

Pathophysiology

- Enlargement of glandular tissue in the periurethral area of the prostate under the influence of testosterone, particularly DHT.
- Estrogen is also implicated, as it makes the gland more susceptible to DHT.
- The prostatic urethra narrows as the prostate gland enlarges, causing partial, or eventually total, obstruction of urine outflow from the bladder.

3 Bladder Cancer

- Painless hematuria
- Pelvic pain
- Lower back discomfort
- Changes in voiding patterns.



Pathophysiology

- More common in middle-aged males than in females.
- Strong association with cigarette smoking.
- Exposure to industrial pollutants (e.g., aniline dyes).
- The tumor-node-metastasis (TNM) method of staging the cancer determines prognosis and treatment.
- Over time, dysplastic changes occur in the urothelium. With chronic irritation, these areas of dysplasia are replaced by malignant cells. The cells may form small cancers that remain in the urothelium or may become invasive and metastatic to the liver, lungs, and bones.

4 Chronic Renal Failure

- History of
  - Diabetic nephropathy,
  - Hypertension,
  - Glomerulonephritis, or
  - An autoimmune disease (systemic lupus erythematosus [SLE])

Pathophysiology

- Gradual destruction of the nephrons and reduction of GFR. Acute renal failure, diabetic nephropathy, and hypertension are the most common causes, but abnormalities of the kidney, autoimmune disorders, and chronic infection or cancer are also causes.

5 Epididymitis

- Painful inflammation of the back of the testes.
- The scrotum is erythematous

Pathophysiology

- Infection and inflammation of the epididymis, the tube along the back side of the testes in which sperm mature and are stored, can be the result of several events.
- In older men, regurgitation of urine from excessive bladder pressure when trying to urinate in the presence of an enlarged prostate can force urine into the vas deferens to the epididymis, causing infections with bacteria such as Escherichia coli.
- Infections with sexually transmitted organisms occur with frequency in young, sexually active males.
- Congenital structural abnormalities in young children predispose them to infection.
- Trauma results from excessive pressure exerted on the epididymis.

6 Glomerulonephritis

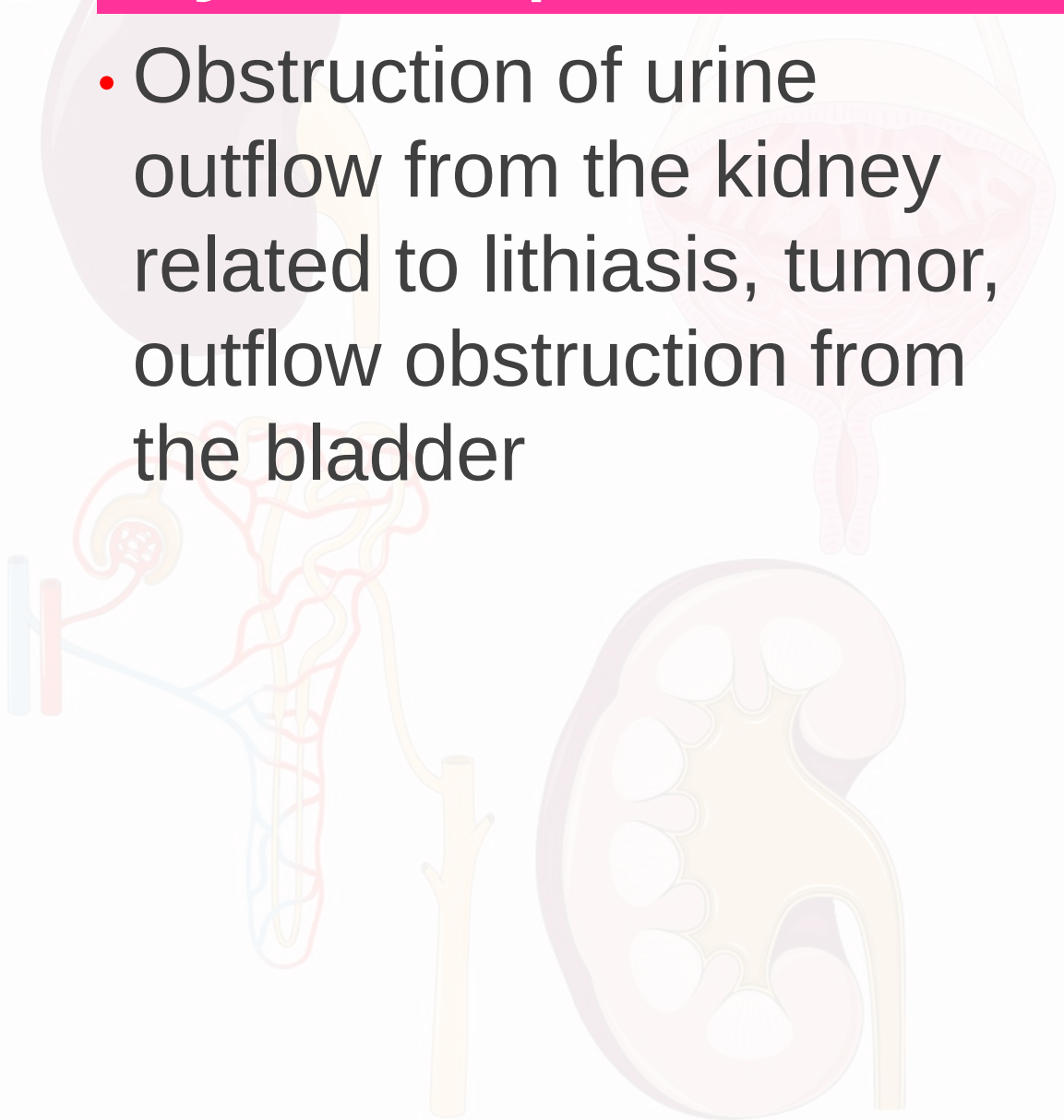
- Hypertension
- Oliguria
- Smoky, frothy urine
- Urinalysis shows RBCs casts, and protein.

Pathophysiology

- The glomerulus is formed from tufts of arteriolar capillaries fed by an afferent arteriole and drained by an efferent arteriole that have thin basement membrane composed of a proteinous matrix and a layer of epithelial cells with footlike outpouches. Blood plasma is forced through these thin structures by a pressure gradient into Bowman's capsule and the renal tubule.
- A number of toxins, diseases, and organisms can cause inflammation and damage to this basement membrane.
- In poststreptococcal infection, antigens are deposited in the basement membrane of the glomerulus. When antigen/antibody complexes form, the immune system destroys them, setting up large areas of inflammation and damage to surrounding structures.

7 Hydronephrosis

- Obstruction of urine outflow from the kidney related to lithiasis, tumor, outflow obstruction from the bladder



Pathophysiology

- Unilateral or bilateral swelling of the renal capsule from regurgitant urine related to outflow obstruction. Because the renal capsule is fibrous, internal functional structures (nephrons) are destroyed.
- Causes may include renal system lithiasis; tumors of the kidneys, ureters, or bladder; enlargement of the prostate; or stricture of the urethra.
- May occur with continuous bladder irrigation (CBI) if a clot obstructs outflow of irrigant and urine or with an obstructed Foley catheter.

8 Nephrotic Syndrome

- Elevated LDL cholesterol and triglyceride
- Proteinuria, frothy urine from protein and lipids,
- Decreased immunoglobulins lost in urine.
- Massive edema.

Pathophysiology

- Nephrotic syndrome is an umbrella term encompassing disorders that result from glomerular damage. Damage to the basement membrane results in loss of blood components that would otherwise remain in circulation.
- Large amounts of protein and immunoglobulins are lost in the urine. Hyperlipidemia and hypertriglyceridemia occur as the liver responds to the low protein levels. Triglycerides and LDL are also lost in the urine, to some extent adding to the frothy appearance.
- Protein loss causes loss of intravascular fluid into the interstitial spaces, but low glomerular filtration rate still results in hypertension.

9 Overactive Bladder

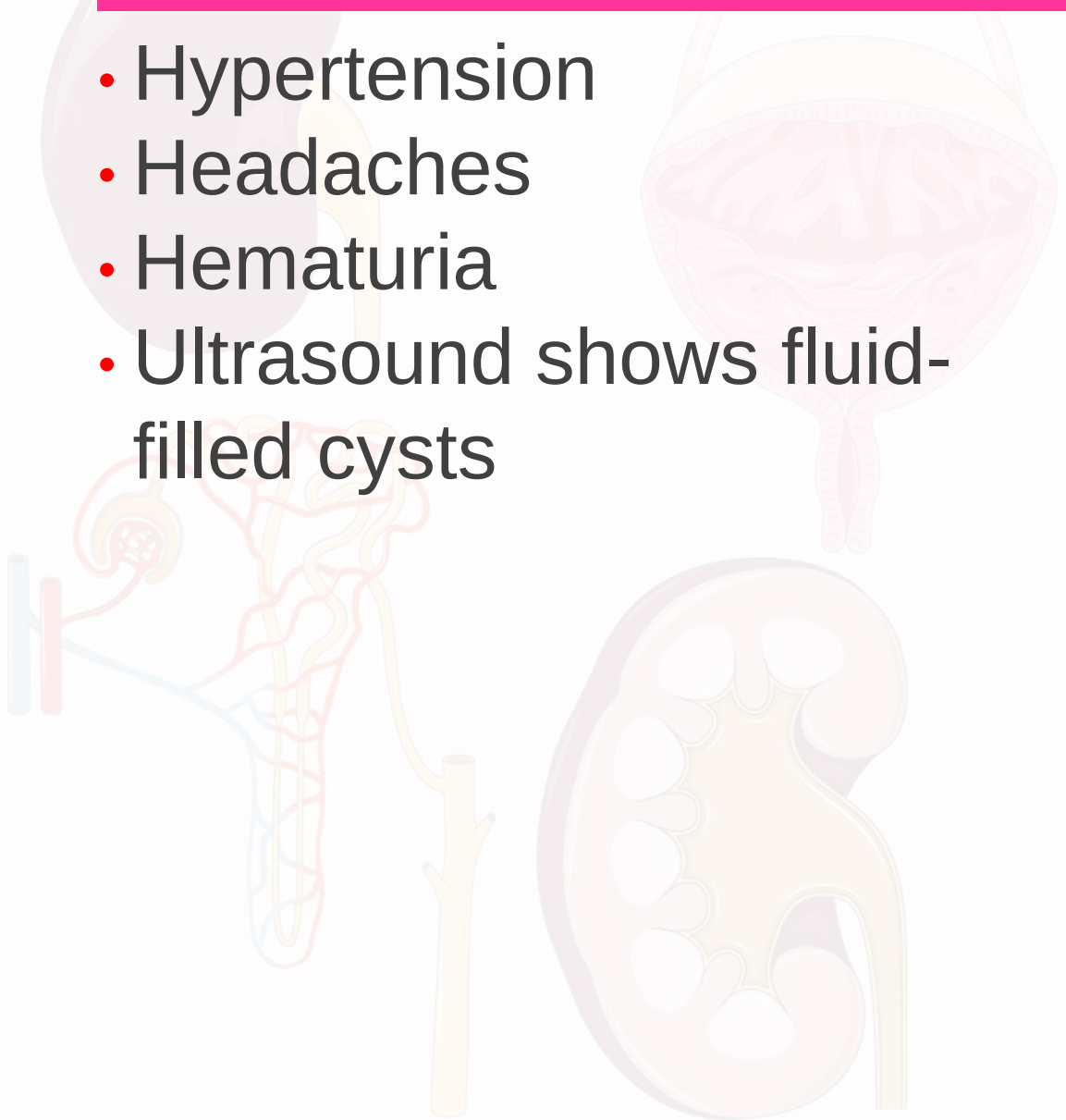
- Urgency
- Frequency
- Stress incontinence related to autonomic and structural anomalies of the bladder.

Pathophysiology

- Overactive bladder is thought to be caused by excessive parasympathetic impulses to the detrusor muscle of the bladder, initiating the micturition response.
- Also, structural anomalies resulting from pelvic relaxation syndrome decrease the angle of the bladder, causing undue pressure on the neck of the bladder and abnormal stretch of the transitional cells, which again triggers the micturition response.
- Neurogenic causes may include chronic neurologic illnesses (e.g., multiple sclerosis) that unintentionally stimulate motor function and the micturition reflex arc, making the bladder more active.

10 Polycystic Kidney Disease

- Hypertension
- Headaches
- Hematuria
- Ultrasound shows fluid-filled cysts



Pathophysiology

- Hereditary disorder causing cystic formation in the cortex or medulla of the kidney.
- Cysts may develop from pressure buildup in the tubules and can progress to the entire kidney.
- Glomerular filtration rate (GFR) decreases.
- Stasis of fluid in the cysts predisposes to repeated urinary tract infection (UTI).
- Persons with this hereditary disease are at high risk for aneurysms in the brain and diverticulosis related to body system formation during the embryonic period.

11 Prostate Cancer

- Late symptoms include
  - Signs of urinary obstruction
  - Pain in the lumbar or hip area
  - Weight loss
  - Weakness
- Urine outflow may be impaired

Pathophysiology

- Prostatic glandular cells mutate and grow under the influence of testosterone and DHT.
- Prostate cancer late in life is usually slow growing (↓ testosterone levels).
- Metastatic spread into other urinary and reproductive structures is through lymph and blood vessels.
- The TNM system is used to grade the cancer and make a prognosis.

12 Pyelonephritis

- Chills
- Fever
- Tenderness over the costovertebral angle
- Dysuria
- Elevated WBC

Pathophysiology

- Usually an ascending urinary tract infection (UTI) caused by a failure of the “washout” mechanism of urine and protective mucin gel. Causative agents are usually Escherichia coli and, to a lesser extent, Staphylococcus aureus.
- Kidney pelvis structures may be damaged by ongoing infection, leading to nephron damage and renal failure.

13 Renal Artery Stenosis

- Onset of severe hypertension in the absence of
  - Glomerular disease
  - Renal failure or
  - Pheochromocytoma

Pathophysiology

- Hypertension occurs when the renal artery becomes narrowed and incapable of transmitting blood to the kidney. The response is activation of the renin-angiotensin-aldosterone mechanism to increase vasoconstriction, further increasing the blood pressure.
- Young women usually develop renal stenosis from fibromuscular dysplasia; older adults develop it from chronic atherosclerotic disease.

14 Renal Calculus

- KUB or US shows one or more masses in the kidneys, ureters, or bladder
- Renal colic in the flank that radiates downward
- Nausea
- Vomiting
- Costovertebral tenderness

Pathophysiology

- Men are affected more than women, and stone formation is usually unilateral. Once stones have formed, repeated formation is likely.
- Irritation of the epithelial cells that line the tubules.
- Dehydration causes more solute to be present in the urine.
- Persons prone to stone formation may lack inhibitor proteins and stones may recur.
- Small stones (<5 mm) usually are passed in the urine.

15 Rhabdomyolysis

- Azotemia
- Edema
- Hypertension
- Hematuria
- Arrhythmias
- Common causative drugs are cholesterol lowering agents

Pathophysiology

- Results from crush injuries (compartment syndrome), the toxic effect of drugs or chemicals on skeletal muscle, extremes of exertion, sepsis, shock, electric shock, and severe hyponatremia.
- Lipid-lowering drugs (e.g., statins, niacin, and/or fibrates) are among the commonly prescribed drugs that cause damage to skeletal muscle fibers that are released into the bloodstream and accumulate in renal tubules.

16 Urethritis

- Dysuria, blood in the urine or ejaculate in a male.
- Discharge from the urethra.
- History of unprotected sex
- In women, pelvic pain

Pathophysiology

- More common in men but can occur in women; also characterized by inflammation and colonization of the urethra by Escherichia coli, Neisseria gonorrhoeae, Chlamydia trachomatis, herpes simplex, or cytomegalovirus.
- Infectious agents may ascend and affect the prostate and infiltrate the lymph nodes in the groin area. In women, these agents can ascend to infect the pelvic area and may be a cause of infertility.

17 Urinary Tract Infection

- Urinary frequency
- Urgency
- Dysuria
- Bacterial count of >100,000/mL of urine

Pathophysiology

- Occurs more frequently in women because of anatomy and age-related structural changes.
- UTIs can also occur as a result of obstructive disease, invasive therapies, and incontinence issues.
- Most UTIs (95%) are caused by contamination and ascension in the urethra by normal flora from the rectum.
- Causative agents are Escherichia coli; Staphylococcus saprophyticus; and to a lesser extent Klebsiella species, Proteus mirabilis, Staphylococcus aureus, and Pseudomonas aeruginosa.
- The normal mucin-surface glycosaminoglycans are overwhelmed and bacteria become adherent to bladder surfaces.
- Soap in bathwater causes UTIs in children.

Gastrointestinal System Disorders

Clinical Medicine Flashcards

- Clinical Clues to Diagnosis
- Pathophysiology

Immune System Disorders

Clinical Medicine Flashcards

- Clinical Clues to Diagnosis
- Pathophysiology

Sensory System Disorders

Clinical Medicine Flashcards

- Clinical Clues to Diagnosis
- Pathophysiology

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educate yourself to empower yourself