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S.TENTISHEV ASIAN MEDICAL INSTITUTE

KANT KYRGZSTAN

Inter-Professional Discipline Department

T.S.A.M

" THE STUDENTS ABSTRACT OF MEDICINE"

For

Interprofessional Communication And Partnership In Health Care & Medical Education

2nd

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AsMI
PHARMACOLOGICAL
SOCIETY

S. Tenishev Asian Medical Institute

Department of Interprofessional Disciplines

A collection of works by AzMI students under the guidance of

Senior lecturer Dr.Aftab Sheikh in the specialty

General Medicine & Dentistry

1-Collection of works by AzMI students under the guidance of Senior lecturer ***Dr.Aftab Sheikh*** was approved and recommended in meeting of
The Department of Interprofessional Disciplines ,Protocol No.01 ,dated 5th of September 2023 academic year.
2-***Approved by Head of the Department Ryspekova Altynay Erkinbekovna***
3-The collection consists of 40-45 pages.
4-The collection will be published 7 times in an academic year
5-Release date from the 20th to 30th of the month.
6-Work of students of 3-4-5 years of 5 and 6 year programs as included and recommended.

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EXTRACORPOREAL-SHOCK-WAVE-LITHOTRIPSY

What is ESWL

The complete term is Extracorporeal Shock Wave Lithotripsy (E.S.W.L.), which means Lithotripsy from the outer core of body i.e., over the skin. Lithotripsy is combination of two words "Litho" and "Tripsy". In Latin, "Litho" is used for "Stone" and "Tripsy" means crushing.

Apparatus use in ESWL

Lithotripter is the apparatus used to perform ESWL.The machines share 4 basic components:

i-shockwave generator
ii-focusing system,
iii-coupling mechanism
iv-imaging/localization unit

Radiations use in ESWL

Lithotripsy treats kidney stones by sending focused ultrasonic energy or shock waves through water balloon to the stone first located with fluoroscopy (a type of X-ray) or ultrasound (high frequency sound waves).Radiation dose to personnel working in the extracorporeal shock wave lithotripsy suite averaged less than 2 mrem. (0.02 mSv.) per case, making it a procedure that is safe in regard to radiation exposure.

How Lithotripsy Performed ?

This method of treatment is unbelievably simple, convenient and comfortable. There is no need to remain empty stomach and no special preparation required. The patient just walks in the lithotripsy room and lies on a soft table. Water filled balloon touches the abdomen like soft cushion and multiple images of stone appear on the TV monitors from various directions. There is no need of anesthesia, as the patient does not feel any pain or inconvenience. The treatment starts in a relaxed atmosphere, while chatting lightly about the procedure. During the process also, the patient feels satisfaction & comfort. It seems as if some soft devise is knocking at his/her skin repeatedly through the balloon cushion. In this peaceful & soothing environment, the stone breaks into pieces in minutes. The patient walks out of the room with a satisfied face and starts the routine life on the same day. This applies to most of patients with certain exceptions. ESWL is a multi session treatment and for very hard and big stones, the procedure may be repeated for more than once.

Post ESWL Precautions

Most people can go back to their regular daily activities 1 or 2 days after this procedure. Drink a lot of water in the weeks after treatment. This helps pass any pieces of stone that still remain. Your health care provider may give you a medicine called an alpha blocker to make it easier to pass the pieces of stone. Clear liquids and a light meal the first evening following surgery. It is recommended that you take it easy for the 24 hours following surgery as you may still have some residual effects from the anesthesia. You may resume all normal activity 24 hours after surgery.

You may return to your normal diet immediately. Because of the raw urinary tract surfaces, alcohol, spicy foods, and drinks with caffeine may cause some irritation or frequency of urination and should be used in moderation.After treatment, the patient can get up to walk almost at once, Many people can fully resume daily activities within one to two days. Special diets are not required, but drinking plenty of water helps the stone fragments pass. For several weeks, you may pass stone fragments.

Medication after ESWL

We can use antibiotic to avoid infections, painkillers, diuretics ,vasodilators and some herbal medication for improve kidney health

Side effects of ESWL

- Blockage in the ureter.
- Blood in the urine or bleeding around the kidney.
- Infection.
- Mild discomfort or bruising on the back (near the treated area).
- Painful urination.

Complications of ESWL

Common

These include mainly:

- Skin lesions
- Hematoma
- Edema of the kidney parenchyma and are an effect of using shockwaves.
- Urinary obstruction caused by deposit fragments and require urological intervention.

Rare

- Perforation of the upper ureter is a rare but serious complication of extracorporeal shock wave lithotripsy (SWL). Ureteral perforation can cause a series of problems including the retroperitoneal urinoma, urosepsis, abscess formation, infection, and subsequent renal function impairment

Advantage and Disadvantages of ESWL

Advantages:

- ESWL is a good procedure for stones that are not too hard and are less than 1.5 to 2 cm in size in the kidney. Most such stones will fragment into sand like particles and pass out easily.
- ESWL is an outpatient procedure that does not require anesthesia or admission.
- ESWL procedure is a non-invasive and a non-surgical procedure that is well tolerated.
- Almost 80% of all stones can be treated quite safely by ESWL.

Disadvantages:

- Treatment results of large stones are not as good as for smaller stones.
- More than one session maybe required to clear the stone.

- A pre-procedure Double J stent maybe required before undertaking ESWL. The stent is a thin tube between the kidney and bladder to prevent stones blocking the ureteric tube and causing obstruction to passage of the urine.
- Hard stones do not fragment despite more than one session and require other methods of treatment.
- Passage of stone may cause acute colics, pain and discomfort.
- It cannot be used if you have any bleeding disorder or if you are pregnant.

Outcome of ESWL

ln those patients who are thought to be good candidates for this treatment, some 50-75% are found to be free of stones within three months of SWL treatment. The highest success rates seem to be in those patients with smaller stones (such as less than 1 cm)

In other studies, In those patients who are thought to be good candidates for this treatment, about 70 to 90 percent are found to be free of stones within three months of treatment.

(© 2015 National Kidney Foundation)

Conclusion

Most of the patients required only one ESWL session. Conclusion. Since there were no complications following ESWL treatment, we can conclude that, in short term, ESWL is an effective and safe treatment modality for renal lithiasis in infants.

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TALIA TANVEER

3rd Year,5th Semester,5th Year

DIABETES MELLITUS

I am Talia Tanveer From Group 7, 5th semester 3rd year.The reason to choose this topic is because my mother is suffering from DM from the last 15 years that's why I wanted to explore its multifaceted treatment approaches, delving into advancements in drug therapies aiming for better management and improved quality of life for patients.

INTRODUCTION

Diabetes is a chronic, metabolic disease characterized by elevated levels of blood glucose (or blood sugar), which leads over time to serious damage to the heart, blood vessels, eyes, kidneys and nerves. It is a condition where the body does not produce enough or is resistant to a hormone called insulin. There are several types of diabetes, including type 1, type 2, and gestational diabetes.

EPIDEMIOLOGY

Diabetes is estimated to affect approximately 530 million adults worldwide, with a global prevalence of 10.5 percent among adults aged 20 to 79 years . Type 2 diabetes represents approximately 98 percent of global diabetes diagnoses, although this proportion varies widely among countries.

MORTALITY RATE

The age-standardized death rate due to diabetes was estimated at 20.9 deaths per 100,000 population.

- ✧ 139,651 deaths in men
- ✧ 144,398 deaths in women

ETIOLOGY

The exact cause of most types of diabetes is unknown. In all cases, sugar builds up in the bloodstream. This is because the pancreas doesn't produce enough insulin. Both type 1 and type 2 diabetes may be caused by a combination of genetic or environmental factors.

RISK FACTORS

- Type 1: Family history,stress
- Type 2: Obesity, lack of exercise, genetics,heart and kidney disease,hypertension
- Gestational diabetes: Hypertension,BM1>30kg/m2, PCOS,family history

SYMPTOMS

- ✧ Polyuria (excessive urine production)
- ✧ Polydipsia (excessive thirst)
- ✧ Weight loss
- ✧ Blurred vision

- ✧ Numbness,tingling of hands and feet
- ✧ Fatigue

PATHOGENESIS

- ➢ TYPE 1:There is a total lack of insulin in type-1 diabetes.It is an autoimmune disease-the immune system mediates destruction of β cells.The pathologic feature of type-1 is "Insulitis".
- ➢ TYPE 2: (Insulin Resistence)It is a metabolic syndrome in which the peripheral tissues resist the effects of insulin.The pathologic feature of type-2 is "Amyloid Deposition" in the Islets of Langerhans.
- ➢ GDM:The principle mechanism of GDM pathophysiology is not yet well known. However, it is generally the result of pancreatic β-cell dysfunction that arises due to a condition of chronic insulin resistance during gestation.

DIAGNOSIS

- ❖ Fasting blood sugar test:Afasting blood sugar level from 100 to 125 mg/dL (5.6 to 6.9 mmol/L) is considered prediabetes. If it's 126 mg/dL (7 mmol/L) or higher on two separate tests, you have diabetes.
- ❖ HbA1c test:It is the main blood test used to diagnose diabetes.It tests your average blood sugar levels for the last two to three months.If HbA1c ≥6.5% ,he is considered to be diabetic.
- ❖ Oral glucose tolerance tests (OGTT): It is used to measure how well the body can process a larger amount of sugar.Blood samples are collected before (fasting) and after (2 hours) administration of an oral glucose load for measurement of plasma glucose. Polycal liquid (previously called Fortical) is used as the glucose load. The 2-hour plasma glucose level ≥200 mg/dL indicates diabetes.

TREATMENT

- ■ Medications:
- ✓ Oral hypoglycemic agents

a. Metformin
b. Sulphonylureas: Tolbutamide,Glibenclamide (only sulphonylurea that is safe in pregnancy)
c. Alpha-Glucosidase Inhibitors:Acarbose,Miglitol
d. Thiazolidinediones:Rosiglitazone

- ✓ Insulin (Type-1 Diabetes)

a. Rapid-acting: Lispro, Aspart
b. Short-acting: Regular
c. Intermediate acting: NPH,Lente
d. Long -acting: Glargine,Ultralente

RATE OF CURE

No cure for diabetes currently exists, but the disease can go into remission. When diabetes goes into remission, it means that the body does not show any signs of diabetes, although the disease is technically still present.

COMPLICATIONS

- ➢ Retinopathy
- ➢ Neuropathy
- ➢ Nephropathy
- ➢ Heart attack
- ➢ Stroke
- ➢ Gangrene

PREVENTIONS

- Diet should be low in sugar, high in fiber, low in fat, high in starchy carbohydrates
- Exercise regularly
- Increase water intake
- Less salt intake if hypertenive
- Weight reduction

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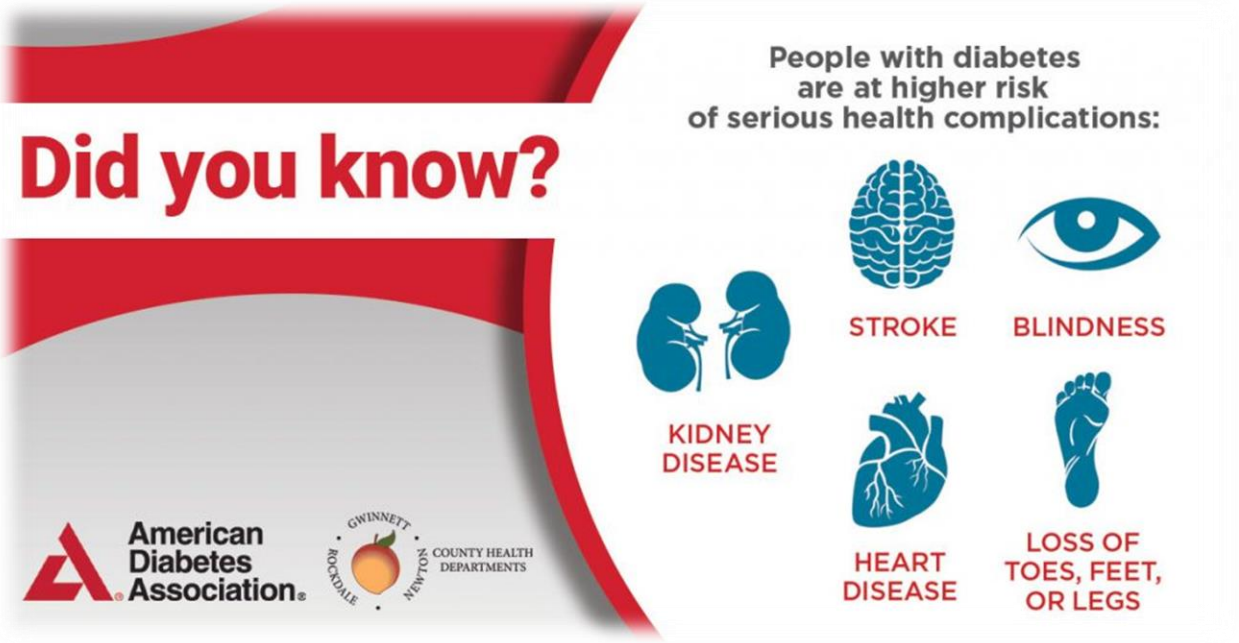

SHEREEN FATIMA
5th Year 9th Semester (2019-2024)

PULMONARY EMBOLISM

A pulmonary embolism (PE) is a blood clot in the blood vessels of your lung. This happens when a clot in another part of your body (often your leg or arm) moves through the veins to your lung. A PE restricts blood flow to your lungs, lowers oxygen levels in your lungs and increases blood pressure in your pulmonary arteries

EPIDEMOLOGY. Wide burden of disease with ~10 million cases per year and an associated substantial morbidity and mortality. The true incidence of PE is unknown, but in the United States, it is estimated that nearly a third of hospitalized patients are at risk of developing VTE and up to 600,000 cases of VTE are diagnosed per year with 100,000 deaths related to these diseases. In the United States, the estimated incidence of diagnosed VTE is 117 per 100,000, but the true incidence is likely to be more as these diseases are frequently undiagnosed or diagnosed only at autopsy. Based on a review of national inpatient data, the number of admissions for PE increased from nearly 60,000 in 1993 (23 per 100,000) to more than 202,000 in 2012 (65 per 100,000).Despite the increased incidence of PE, there was a decreased incidence of massive PE and hospital mortality over the same time period. Comorbidities associated with PE are also increasing (aging population and medical comorbidities), but the increased incidence in the face of decreased mortality likely reflects increased use of more sensitive CT angiography for diagnosis rather than a true change in prevalence.

VTE disproportionately affects the older population and incidence rates of VTE in those older than 70 years are three times higher than those aged 45 to 69 years, which again are three times higher than those aged 20 to 44 years. This age-related increase in incidence in VTE is largely attributed to a disproportionate increase in PE burden. The reported incidence of VTE is inconsistent with regard to gender, though several studies suggest higher incidence in males. Between 5 and 10% of in-hospital deaths are a direct result of PE. In the United States, PE is responsible for 100,000 deaths per year, though deaths from diagnosed PE have been decreasing. Nevertheless, VTE is associated with significant mortality. The case fatality rate of a VTE event is ~10% at 30 days, which increases to 15% within 3 months, with a further increase up to 20% by 1 year.

PATHPHYSIOLOGY. If there is an occlusion or partial occlusion of the pulmonary artery or its branches, it will cause a pulmonary embolism.

Common cause: An embolized clot from deep vein thrombosis (DVT) involving the lower leg.

Less common causes: Tissue fragments, Lipids,Foreign body,Air bubble,Amniotic fluid

Pulmonary emboli can result in any of the following:

1.Embolus with infarction: causes the death of a portion of the lung tissue.

2.Embolus without infarction: doesn't cause permanent lung injury since perfusion of the affected segment is maintained.
3.Massive occlusion: blocks a major portion of the pulmonary circulation.
4.Multiple pulmonary emboli: numerous emboli that may be chronic or recurring.
Pathogenesis: When the conditions arise to form a thrombus, it can become dislodged and a piece can break off, known as an embolus. When the embolus is navigating the circulatory system, it can obstruct the pulmonary circulation. The body sends a signal to release neurohormonal substances and inflammatory mediators, which cause vasoconstriction. Increased pulmonary hypertension occurs. The absent blood flow to the affected lung segment causes ventilation-perfusion mismatch and a decrease in surfactant production by the alveoli that help them expand during inspiration. This results in atelectasis and further worsens hypoxia. If the embolus is large enough, infarction of the lung tissue, dysrhythmias, decreased cardiac output, shock, and death are possible.
RISK FACTORS. Factors that promote venous thrombosis is known as the triad of Virchow.
1.Venous stasis (immobilization, heart failure, obesity, prolonged leg dependency, age)
2.Hypercoagulability (inherited coagulation disorders, malignancy, hormone replacement, oral contraceptives, pregnancy, smoking)
3.Endothelial injury (trauma, infection, caustic intravenous infusions)
Genetic risks include: factor V Leiden mutation, antithrombin II deficiency, protein S deficiency, activated protein C deficiency, and prothrombin.
SYMPTOMS. Pulmonary embolism symptoms can vary greatly, depending on how much of your lung is involved, the size of the clots, and whether you have underlying lung or heart disease.
Common symptoms include:

- ✓ Shortness of breath. This symptom usually appears suddenly. Trouble catching your breath happens even when resting and gets worse with physical activity.
- ✓ Chest pain. You may feel like you're having a heart attack. The pain is often sharp and felt when you breathe in deeply. The pain can stop you from being able to take a deep breath. You also may feel it when you cough, bend or lean over.
- ✓ Fainting. You may pass out if your heart rate or blood pressure drops suddenly. This is called syncope.

Other symptoms that can occur with pulmonary embolism include:

- ✓ A cough that may include bloody or blood-streaked mucus
- ✓ Rapid or irregular heartbeat
- ✓ Lightheadedness or dizziness
- ✓ Excessive sweating
- ✓ Fever
- ✓ Leg pain or swelling, or both, usually in the back of the lower leg
- ✓ Clammy or discolored skin, called cyanosis.

COMPLICATIONS.A pulmonary embolism can be life-threatening. About one-third of people with an undiagnosed and untreated pulmonary embolism don't survive. When the condition is diagnosed and treated promptly, however, that number drops dramatically.

Pulmonary embolisms also can lead to pulmonary hypertension, a condition in which the blood pressure in the lungs and in the right side of the heart is too high. When you have blockages in the arteries inside your lungs, your heart must work harder to push blood through those vessels. This increases blood pressure and eventually weakens your heart.

In rare cases, small clots called emboli remain in the lungs and scarring develops in the pulmonary arteries over time. This restricts blood flow and results in chronic pulmonary hypertension.

DIAGNOSIS. A pulmonary embolism can be difficult to diagnose, especially if you have underlying heart or lung disease. For that reason, your health care provider will likely discuss your medical history, do a physical exam, and order tests that may include one or more of the following.

Blood tests	Pulmonary angiogram
Chest X-ray	Ultrasound
CT pulmonary angiography	Ventilation-perfusion (V/Q) scan
MRI	

TREATMENT. Treatment of a pulmonary embolism focuses on keeping the blood clot from getting bigger and preventing new clots from forming. Prompt treatment is essential to prevent serious complications or death.

Treatment can include medicines, surgery and other procedures, and ongoing care.

MEDICATIONS. Medicines include different types of blood thinners and clot dissolvers.

- Blood thinners. These blood-thinning medicines called anticoagulants prevent existing clots from getting bigger and new clots from forming while your body works to break up the clots. Heparin is a frequently used anticoagulant that can be given through a vein or injected under the skin. It acts quickly and is often given along with an oral anticoagulant, such as warfarin (Jantovin), until the oral medicine becomes effective. This can take several days.

Newer oral anticoagulants work more quickly and have fewer interactions with other medicines. Some have the advantage of being given by mouth until they're effective, without the need for heparin. However, all anticoagulants have side effects, and bleeding is the most common.

- Clot dissolvers. While clots usually dissolve on their own, sometimes thrombolytics — medicines that dissolve clots — given through a vein can dissolve clots quickly. Because these clot-busting medicines can cause sudden and severe bleeding, they usually are reserved for life-threatening situations.

SURGICAL AND OTHER PROCEDURES

- Clot removal. If you have a large, life-threatening clot in your lung, your health care provider may remove it using a thin, flexible catheter threaded through your blood vessels.
- Vein filter. A catheter also can be used to position a filter in the body's main vein, the inferior vena cava, that leads from your legs to the right side of your heart. The filter can help keep clots from going to your lungs. This procedure is usually only used for people who can't take anticoagulant drugs or those who get blood clots even with the use of anticoagulants. Some filters can be removed when no longer needed.

Reference: Mayo clinic, Clive land clinic

RIYA ARYAN
5th Year 9th Semester (2019-2024)

GASTROESOPHAGEAL REFLUX DISEASE (GERD)

INTRODUCTION

- ✓ A condition that occurs when refluxed stomach contents lead to troublesome symptoms and/or complications
- ✓ Episodic pyrosis (heartburn) that is not frequent enough or painful enough to be considered bothersome by the patient is not included in the above consensus GERD definition
- ✓ Pyrosis frequency of more than 2 times per week is sometimes used as a criteria for GERD
- ✓ Chronic symptoms or mucosal damage produced by the abnormal reflux of gastric contents into the esophagus.
- ✓ Symptoms of GERD vary in severity, duration, and frequency.
- ✓ When the esophagus is repeatedly exposed to refluxed material for prolonged periods of time, inflammation of the esophagus (esophagitis) occurs, and in some cases it can progress to erosion of the squamous epithelium of the esophagus (erosive esophagitis) and may lead to other complications.

MORTALITY

Severe daily symptoms (defined as symptoms interfering with daily work or causing nighttime awakenings on a daily bases, reported by 4.3% of participants) were associated with cancer mortality (HR 1.48, 95% CI: 1.04-2.05). This increase was too small to noticeably affect overall mortality. Mortality was not associated with onset time or frequency of GERD and was not increased with mild to moderate symptoms.

Only a few studies in Western countries have investigated the association between gastroesophageal reflux disease (GERD) and mortality at the general population level and they have shown mixed results. This study investigated the association between GERD symptoms and overall and cause-specific mortality in a large prospective population-based study in Golestan Province, Iran.

Baseline data on frequency, onset time, and patient-perceived severity of GERD symptoms were available for 50001 participants in the Golestan Cohort Study (GCS). We identified 3107 deaths (including 1146 circulatory and 470 cancer-related) with an average follow-up of 6.4 years and calculated hazard ratios (HR) and 95% confidence intervals (CI) adjusted for multiple potential confounders.

RISK FACTORS

Obesity (BMI ≥ 30)	Respiratory diseases	Alcohol use
Smoking	Excessive caffeine intake	

GERD SYMPYOMS

•GERD symptoms are often grouped in 3 categories
–Typical or "classic" esophageal symptoms
–Alarm or complicated symptoms
•May be indicative of GERD complications
–Atypical or extraesophageal symptoms

Typical or "Classic" Symptoms

•Pyrosis (heartburn)
–Hallmark symptom
–A substernal feeling of warmth or burning rising up from the abdomen that may radiate to the neck
•Regurgitation/Belching
•Acid brash/Hypersalivation
•Chest pain (non cardiac in nature)

Alarm (Complicated) Symptoms

•Any of these symptoms warrant immediate referral for testing
–Dysphagia
–Odynophagia
–Bleeding
–Unexplained weight loss
–Choking
–Chest pain (if could be cardiac in nature)

Extraesophageal Symptoms/Manifestations (Atypical Symptoms)

•These symptoms have an association with GERD but causality should only be considered if a concomitant esophageal symptoms are present
–Chronic cough
–Asthma-like symptoms
•About 50% of those with asthma have GERD
–Laryngitis/Hoarseness
–Recurrent sore throat
–Dental enamel erosion

PATHOGENESIS

The mechanisms involved in the pathogenesis of GERD are multiple and include: a) motor abnormalities, such as impaired lower esophageal sphincter (LES) resting tone, transient LES relaxations (TLESR), impaired esophageal acid clearance and delayed gastric emptying; b) anatomical factors, such as hiatal hernia; c) visceral hypersensitivity; d) impaired mucosal resistance.

COMPLICATIONS OF GERD

Esophagitis
Erosions and ulceration of the esophageal mucosa
•Strictures of the esophagus
–Secondary to fibrous tissue deposition after long standing erosion
•Barrett's esophagus

–Present in about 10% of those with GERD
–Most prevalent in white males in Western countries
•Esophageal adenocarcinoma
Diagnosis/Diagnostic Tests

CLINICAL HISTORY

–Patient's description of typical or classic GERD symptoms such as pyrosis, is often enough to consider GERD as an initial diagnosis (uncomplicated GERD)
•Empiric trial of proton pump inhibitor (PPI) therapy
–ACG (American College of Gastroenterology) guidelines state that it is reasonable to assume a GERD diagnosis in patients who respond to appropriate therapy

ENDOSCOPY

–Endoscopy is the technique of choice to identify complications of GERD such as ulcerations, erosions, Barrett's esophagus, etc.
–Biopsy of the esophageal tissue is needed to identify and diagnose Barrett's esophagus and esophageal adenocarcinoma
–Many patients with GERD (presenting with typical or atypical symptoms) will have normal appearing esophageal mucosa on endoscopy
–Usually not part of the work-up except in certain subsets of patients (alarm symptoms, those refractory to treatment, etc.)

AMBULATORY pH MONITORING

–Identifies patients with excessive esophageal acid exposure and helps determine if symptoms are acid related
–Useful in patients not responding to acid-suppression therapy
•Barium Radiography
–Not routinely used to diagnose GERD due to a lack of sensitivity and specificity
–Can detect hiatal hernia

TREATMENT

- ✓ Antacids and alginic acid products
- ✓ H2-receptor antagonists (HRA)
- ✓ Proton pump inhibitors (PPIs)
- ✓ Promotility agents
- ✓ Antacids. Doctors may recommend antacids to relieve mild heartburn and other mild GER and GERD symptoms. ...
- ✓ H2 blockers. H2 blockers lower the amount of acid your stomach makes. ...
- ✓ Proton pump inhibitors (PPIs). ...
- ✓ Other medicines. ...
- ✓ Fundoplication. ...
- ✓ Bariatric surgery. ...
- ✓ Endoscopy.

CONCLUSION

Majority of patients presenting with typical symptoms of GERD are usually recognized and managed by primary care providers. Patients with medically refractory GERD and alarm symptoms are generally referred to gastroenterologists. The management of GERD requires an interprofessional approach involving primary care providers, gastroenterologists,

otolaryngologists, pulmonologists, bariatric surgeons, and pharmacists. Primary care physicians should obtain a good history to evaluate for any alarm symptoms or intrinsic cardiac causes and should promptly refer patients for further cardiac evaluation. Considering lifestyle modifications are the cornerstone of GERD management, patients should be counseled about weight loss, tobacco and alcohol cessation, and avoidance of late meals. Bariatric surgery should be discussed with morbidly obese patients presenting with GERD symptoms and should be promptly referred for bariatric surgery evaluation. Otolaryngologists and pulmonologists should consider GERD in their differentials when evaluating patients presenting with atypical symptoms that include chronic cough, laryngitis, asthma, and hoarseness. Cases of patients with medically refractory GERD should be discussed in a multidisciplinary approach with the surgeons, pharmacists, and endoscopy nurses. Complications of GERD should be promptly recognized, evaluated, and treated to prevent long-term morbidity. This interprofessional approach helps in the management of GERD, resulting in improved patients outcomes and increased quality of life.

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HASSAN SHAFQAT
5th Year 9th Semester (2019-2024)

HYPERTENSION

Hypertension, also known as high blood pressure, is a medical condition characterized by persistently elevated blood pressure in the arteries.
Blood pressure= cardiac output × peripheral vascular resistance
↓ Cardiac output and ↑ PVR

TYPES OF HYPERTENSION

Hypertension is classified into two categories:
1.Primary (essential) hypertension (95%): This is the most common type and has no identifiable cause. This type of hypertension is most common in people ages of 25 to 55 years
2. Second hypertension(5%): This type of hypertension occurs below the age of 20 years or after 50 years. Secondary hypertension is due to secondary causes like renal failure, renal artery stenosis or coarctation of aorta etc.
Some other types :

- ✓ Gestational hypertension (during pregnancy)
- ✓ Pulmonary hypertension

CLINICAL FEATURES

- ✓ Confusion
- ✓ Palpitations
- ✓ Headache
- ✓ Visual disturbances
- ✓ Difficulty in speech
- ✓ Nausea
- ✓ Vomiting
- ✓ Tremor

RISK FACTORS

- ✓ Genetic factors: hypertensive parents can have hypertensive offspring.
- ✓ Environmental factors:
- ✓ Obesity
- ✓ .Lack of exercise
- ✓ Excessive Alcohol consumption
- ✓ Eating fatty Food
- ✓ More salt intake
- ✓ Polycythemia
- ✓ Cigarette smoking
- ✓ Excessive intake of NSAIDs
- ✓ Diabetes mellitus

PATHOGENESIS

Exact mechanism is unknown but genetic and environmental factors can lead to hypertension.
1. RAAS MECHANISM (Renin- Angiotensin Aldosterone system) that plays important role in maintaining blood pressure of human body by converting angiotensin 1 into Angiotensin 2 with the help of Angiotensin converting enzyme (ACE). So due to renal impairment this system will be disturbed and leads to fluctuations in the blood pressure.

2. Diet: Taking high sodium diet and low potassium diet can also leads to hypertension and excessive intake of saturated fats can also cause hypertension by formation of plaque within walls of vessels (atherosclerosis).

*** Note:** It's a multifactorial condition with various interacting factors, and individual cases may vary.

DIAGNOSIS

There are different methods of investigation:

1. Urinalysis (To detect any problem in kidney)
2. ECG (To detect any problem related to heart that affects cardiac output)
3. Lipid profile (To check hypercholesterolemia)
4.Hetamocrit (To detect polycythemia)
5. Serum potassium (To check level of potassium due to low level of K+ there will be hyperaldosteronism that leads to hypertension)

TREATMENT

Treatment depends on the etiology and condition of the patient.

1. By changing lifestyle:

Primary Hypertension can be treated by modifying lifestyle by advising patient:

* Lose weight
* Avoid high salt diet
* Avoid saturated fats in diet
* Do exercise and meditation

Secondary hypertension needs proper treatment, so we recommend antihypertensives drugs to treat patient accordingly. These drugs include:

* Diuretics
*Beta- Blockers
*Ace inhibitors
*ARBs (Angiotensin receptor blockers)
* Calcium channel blockers
* Vasodilators

We recommend these according to condition and history of patient.

COMPLICATIONS

If hypertension is not treated properly at initial stage it can cause complications:

* Hypertensive encephalitis
* Stroke or Brain hemorrhage
* Renal failure
* Heart failure .
* Vision loss due to retinal damage.

The most dangerous complication is hypertensive crisis,
In which blood pressure will be :
Systolic > 220mmHg
Diastolic> 125mmHg
This is an emergency situation otherwise other body organs will be damaged that can lead to death.

REFERENCE-Internal Medicine Inam Danish

MUHAMMAD ASAD JANJUA
5th Year 9th Semester (2019-2024)

HEPATOMEGALY (A Comprehensive Overview)

INTRODUCTION

Enlarged liver refers to swelling of the liver beyond its normal size

This article provides a comprehended overview of hepatomegaly, including its occurrence, mortality rates, causes, risk factors, development process, diagnosis, treatment options and including summary of topic

OCCURRENCE

Hepatomegaly occurs in 40% to 50% of patients, with abnormal liver function tests (LFTs) in up to 25%

According to the CDC, men are more likely to die from chronic liver disease and cirrhosis than women are. Men also had higher death rates from cirrhosis caused by alcohol-related liver disease

MORTALITY

The strong rate of death (73.33%) recorded occurred among patients carrying a hepatomegaly against 15.25% of death without hepatomegaly (P = 0.0001). The overall rates Total survival is on average 17 months against 20 months 28 days in the event of absence of the hepatomegaly (P = 0.0001)

CAUSES

The liver is involved in many of the body's functions. It is affected by many conditions that can cause hepatomegaly, including:

Alcohol use (especially alcohol abuse), Cancer metastases (spread of cancer to the liver)
Congestive heart failure, Glycogen storage disease
Hepatitis A, Hepatitis B, Hepatitis C, Hepatocellular carcinoma
Hereditary fructose intolerance, Infectious mononucleosis
Leukemia, Niemann-Pick disease, Primary biliary cholangitis, Reye syndrome
Sarcoidosis, Sclerosing cholangitis
Portal vein thrombosis, Steatosis (fat in the liver from metabolic problems such as diabetes, obesity, and high triglycerides, also called nonalcoholic steatohepatitis, or NASH)

RISK FACTORS

Developmental Process

The reason for hepatomegaly may be an increase in cell number as in neoplastic or infectious forms of hepatomegaly, with neoplastic or inflammatory cells invading the liver. In addition, inflammation may cause interstitial edema and cell swelling

DIAGNOSIS

Obesity, alcohol addiction, liver cancer, hepatitis, diabetes, high cholesterol

Splenomegaly is caused by hepatomegaly about 30 percent of the time. There are many different potential causes of liver disease

Doctor might start by feeling your abdomen during a physical exam to determine liver size, shape and texture. However, this might not be enough to diagnose an enlarged liver.

Additional procedures,

If doctor suspects you have an enlarged liver, he or she might recommend other tests and procedures, including:

Blood tests. A blood sample is tested to determine liver enzyme levels and identify viruses that can cause enlarged liver.

Imaging tests. Imaging tests include CT scan, ultrasound or MRI.

Magnetic resonance elastography uses sound waves to create a visual map (elastogram) of the stiffness of liver tissue. This noninvasive test can be an alternative to a liver biopsy.

Removing a sample of liver tissue for testing (liver biopsy). A liver biopsy is often done using a long, thin needle that's inserted through your skin and into your liver. The needle draws out a core of tissue that is then sent to a laboratory for testing

TREATMENT

Your treatment options depend upon the underlying disorders that cause your liver enlargement. Some of the treatments your doctor will recommend may include:

- ✓ Medications and treatments for liver failure or infections like hepatitis C
- ✓ Chemotherapy, surgery, or radiation for liver cancer
- ✓ A liver transplant for liver damage
- ✓ Treating the source for metastatic cancer
- ✓ Treatment for lymphoma or leukemia, depending upon the type, degree of spread, and your general health
- ✓ Quitting alcohol or any others drugs

CONCLUSION

Hepatomegaly is a medical condition with significant implications for patient health, understanding it's occurrence, causes, risk factors, developmental process, diagnosis, and treatment options are crucial for effective management. Early identification and appropriate intervention can help prevent complications and improve patient outcomes

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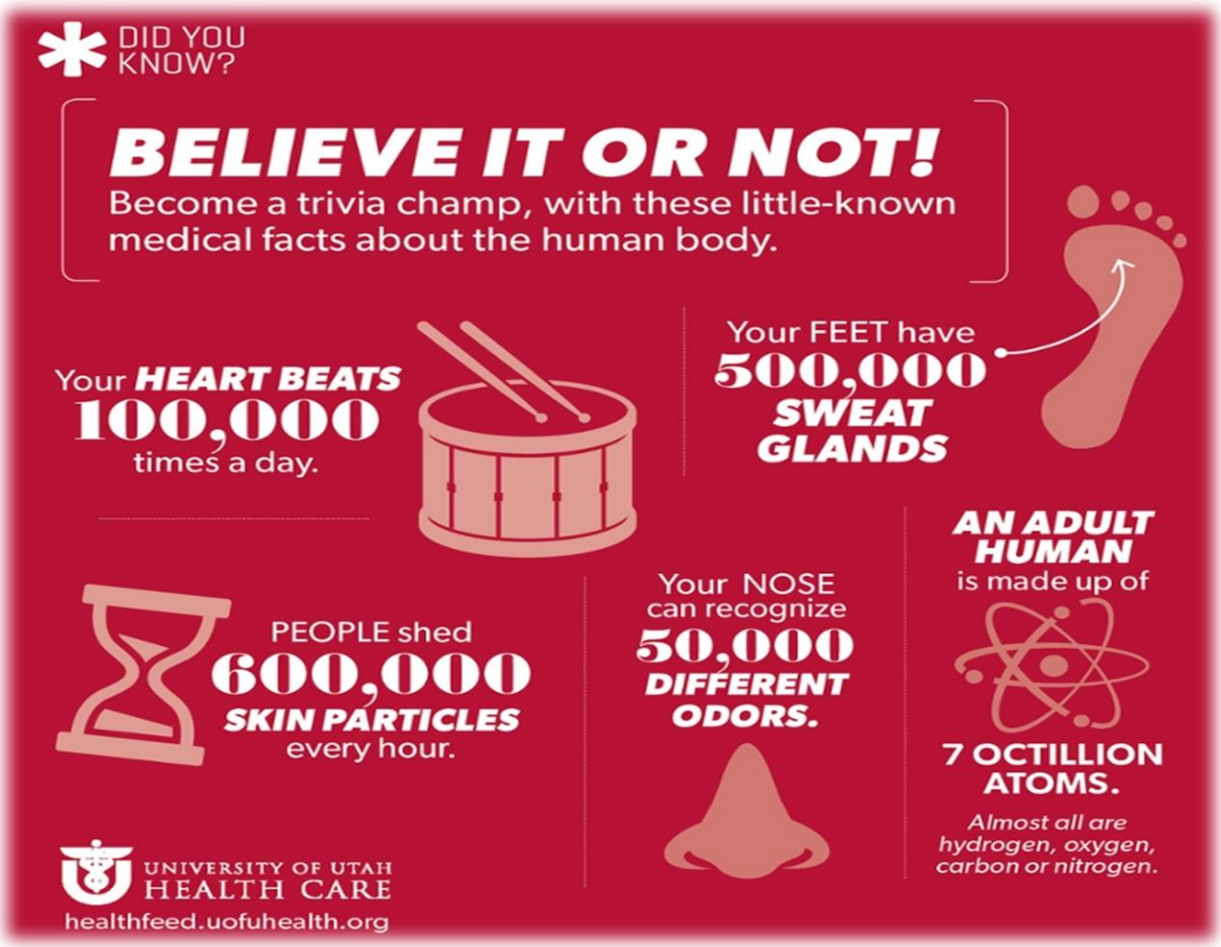

HUMD ELAHI
5th Year 9th Semester (2019-2024)

ABSTINENCE SYNDROME

DEFINATION

Abstinence syndrome, also known as withdrawal syndrome or withdrawal symptoms, refers to a collection of physical and psychological symptoms that occur when a person abruptly reduces or stops the use of a substance to which they have developed dependence.

CAUSES

Abstinence syndrome can be caused by the cessation or reduction of various substances, including alcohol, opioids, benzodiazepines, stimulants, and others. It arises due to the body's adaptation to the presence of the substance, leading to physiological and neurochemical changes.

EPIDEMOLOGY

The prevalence of abstinence syndrome varies depending on the substance involved. It is a significant concern worldwide, affecting millions of individuals. Specific substance use disorders may have different rates of withdrawal symptoms, and the incidence can be influenced by factors such as accessibility, cultural norms, and individual susceptibility.

MORTALITY RATE

The mortality rate associated with abstinence syndrome can be influenced by several factors, including the type and severity of the substance use disorder, the presence of co-occurring medical or psychiatric conditions, and the availability and effectiveness of medical interventions. Mortality rates can be particularly high in cases of severe alcohol withdrawal and withdrawal from certain sedatives.

SIGN and SYMPTOMS

Abstinence syndrome manifests with a wide range of physical and psychological symptoms. Physical symptoms may include tremors, sweating, palpitations, nausea, vomiting, abdominal pain, muscle aches, and increased blood pressure. Psychological symptoms can encompass anxiety, restlessness, irritability, depression, insomnia, poor concentration, and intense drug cravings.

RISK FACTORS

Several factors increase the risk of developing abstinence syndrome. These include a long history of substance use, high frequency and dosage of substance use, sudden cessation or reduction of substance use, underlying medical or psychiatric conditions, and previous experiences of withdrawal symptoms.

DIAGNOSIS

Diagnosing abstinence syndrome involves a comprehensive evaluation of the individual's medical history, substance use patterns, and physical and psychological symptoms. Healthcare professionals may use standardized assessment tools to assess the severity of withdrawal symptoms and guide treatment decisions.

TREATMENT

The management of abstinence syndrome typically involves a multidisciplinary approach. The primary goals are to alleviate withdrawal symptoms, prevent complications, and support the individual's long-term recovery. Treatment strategies may include pharmacotherapy to manage specific symptoms, such as opioid replacement therapy or benzodiazepine tapering, as well as supportive care, counseling, and behavioral interventions. Drugs of choice are MORPHINE, METHADONE, BUPRENORPHINE.

CONCLUSION

In conclusion, abstinence syndrome refers to the collection of symptoms that occur when a person stops or reduces substance use after developing dependence. It is a global concern, and the mortality rate can vary depending on several factors. Recognizing the signs and symptoms, understanding the associated risk factors, and providing appropriate diagnosis and treatment are essential for promoting successful recovery and preventing complications in individuals experiencing abstinence syndrome.

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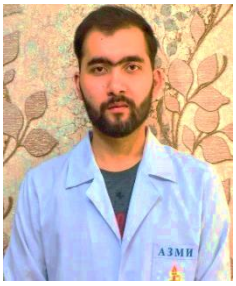

SOURABH SHUKLA
5th Year 9th Semester (2019-2024)

ASTHMA

DEFINITION

The airways in the body can be affected by asthma, a chronic inflammatory disorder. Sensitivity and irritation are frequently noted in this condition, often leading to airflow obstruction and difficult breathing. Asthma attacks, which can differ in severity and frequency from person to person, are periodic episodes that are familiar to most people.

CAUSE

Environmental and genetic factors are thought to contribute to asthma, though medical experts have not fully grasped its origins. Those with a history of asthma or allergies in their family tend to be more susceptible to this condition. Asthma symptoms can also stem from exposure to allergens such as respiratory infections, pet dander, dust mites, and pollen.

EPIDEMIOLOGY

Amidst the various public health issues worldwide, asthma has its own mark. Around 235 million individuals are affected by asthma, says the World Health Organization (WHO). The prevalence of this disease changes from country to country, and age also plays a crucial role. It is a condition that targets everyone, adults and children alike, with the latter being more prone to it. Urban development, pollution, and lifestyle differences all contribute to the increasing number of cases.

MORTALITY RATE

The mortality rate varies depending on the country and access to healthcare. However, deaths caused by asthma are relatively rare; nonetheless, unmanaged severe asthma can result in a threat to one's life. To minimize asthma-related fatalities, essential steps include early detection, adequate education, and proper treatment.

SIGNS & SYMPTOMS

Asthma presents an array of symptoms, ranging in severity from slight to extreme. This can include coughing (especially during physical activity or when the sun goes down), chest tightness, wheezing (a whistling sound when breathing), and shortness of breath. These symptoms are susceptible to worsening upon exposure to triggers such as allergens, smoke, cold air, and physical exertion.

RISK FACTORS

Undergoing asthma can be provoked by various elements. Being exposed to secondhand smoke during childhood, frequent respiratory infections when young, occupational exposure to certain substances, obesity, a history of allergic conditions such as eczema or allergic rhinitis, and a family history of asthma or allergies are all some of the key components.

DIAGNOSIS

The diagnosis of asthma requires a combination of history taking, physical examination, and pulmonary function tests. A healthcare professional evaluates symptoms, evaluates lung function using a spirometer, and may order other tests, such as bronchial challenge testing or allergy testing, to identify specific triggers.

TREATMENT

The goals of asthma treatment are to control symptoms, reduce the frequency and severity of attacks, and improve quality of life. Treatment usually involves a stepwise approach, including medications such as inhaled corticosteroids, bronchodilators, and leukotriene modulators.

CONCLUSION

Asthma is a chronic respiratory disease that affects millions of people worldwide. With the right medical care, lifestyle changes, and adherence to a prescribed treatment plan, people with asthma can lead active and fulfilling lives while minimizing the condition's impact on their daily activities.

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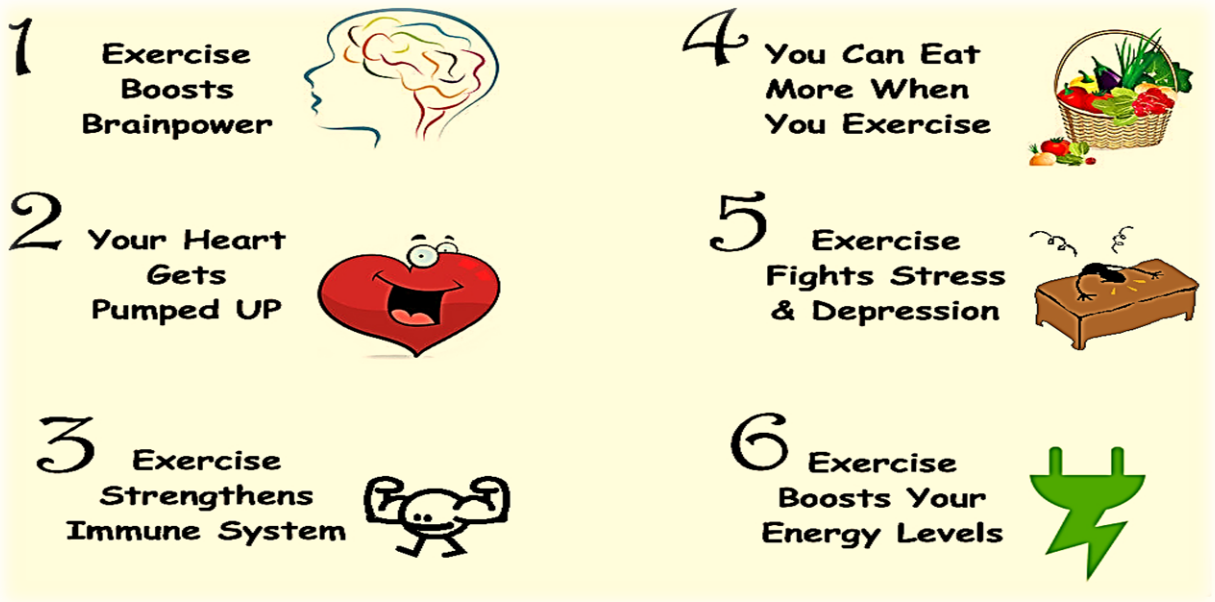

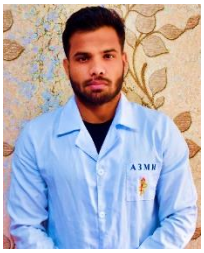

MOHD PARVEZ
5th Year 9th Semester (2019-2024)

GONORRHEA

DEFINATION

Gonorrhea is a sexually transmitted disease (STD) caused by infection with the Neisseria gonorrhoeae bacterium. N. gonorrhoeae infects the mucous membranes of the reproductive tract, including the cervix, uterus, and fallopian tubes in women, and the urethra in women and men..

CAUSES

The bacterium Neisseria gonorrhoeae is responsible for causing gonorrhea. It thrives in warm, moist areas of the body and is primarily transmitted through sexual contact, including vaginal, anal, or oral sex. The infection can be contracted by coming into contact with the mucous membranes of an infected individual, and it can also be transmitted from mother to child during childbirth.

EPIDEMOLOGY and MORTALITY RATE

Gonorrhea is a global health concern, with millions of new cases reported each year. According to the World Health Organization (WHO), approximately 87 million new cases of gonorrhea occur annually. The infection is more prevalent in young adults, particularly those aged 15-24. Although gonorrhea is generally treatable, untreated or inadequately treated cases can lead to severe complications. However, the mortality rate directly attributed to gonorrhea is relatively low.

SIGN and SYMPTOMS

Gonorrhea can manifest with a range of symptoms, although many infected individuals may be asymptomatic, especially in the early stages of the infection. Common signs and symptoms in men include a burning sensation during urination, discharge from the penis, and swollen or painful testicles. Women may experience increased vaginal discharge, painful urination, pelvic pain, and abnormal vaginal bleeding. Rectal infections can cause anal itching, discharge, and discomfort, while throat infections may result in a sore throat.

RISK FACTORS

Several factors increase the risk of contracting gonorrhea. Unprotected sexual intercourse, having multiple sexual partners, engaging in high-risk sexual behaviors (such as not using condoms), and a history of other sexually transmitted infections can all elevate the chances of infection. Adolescents and young adults, particularly those in unstable relationships, are at higher risk.

DIAGNOSIS

Diagnosing gonorrhea involves a combination of laboratory tests and clinical evaluation. Healthcare providers may collect samples of discharge or swabs from the affected area for laboratory testing. These tests can detect the presence of the Neisseria gonorrhoeae bacterium.

Additionally, individuals who engage in high-risk sexual behavior are advised to get tested regularly, even in the absence of symptoms, to ensure early detection.

TREATMENT

Gonorrhea can be treated effectively with antibiotics. Dual therapy, involving the use of two different antibiotics, is often recommended to ensure successful treatment. Treating sexual partners simultaneously is essential to prevent reinfection. Regular testing, safe sexual practices, and open communication with sexual partners are crucial for preventing the spread of gonorrhea. Treatment of choice for gonorrhea is IM CEFTRIAXONE.

CONCLUSION

Gonorrhea, a sexually transmitted infection caused by Neisseria gonorrhoeae, poses a significant public health challenge worldwide. Education, regular testing, and safe sexual practices are key in reducing the burden of gonorrhea and promoting sexual health and well-being.

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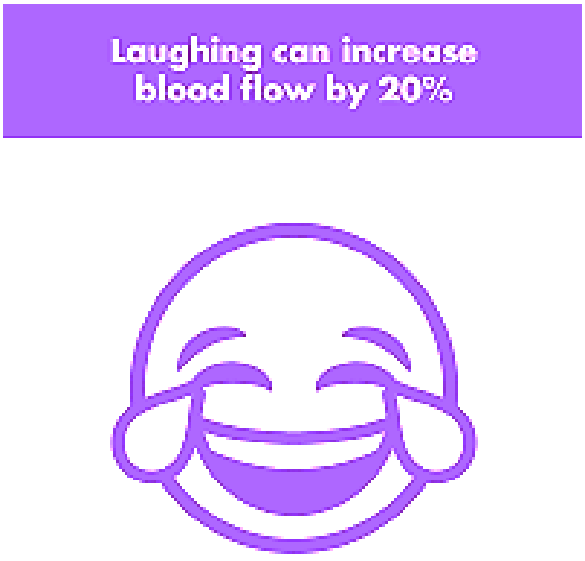

SHIKHA PATEL
5th Year 9th Semester (2019-2024)

POLYCYSTIC OVARY SYNDROME (PCOS)

DEFINATION

Polycystic ovary syndrome (PCOS) is a condition in which the ovaries produce an abnormal amount of androgens, male sex hormones that are usually present in women in small amounts. The name polycystic ovary syndrome describes the numerous small cysts (fluid-filled sacs) that form in the ovaries.

CAUSES

PCOS is a metabolic disorder and more severe form of PCOD can lead to anovulation where ovaries stop releasing eggs.

EPIDEMIOLOGY

PCOS is one of the most prevalent endocrine disorders in women of reproductive age. It is estimated that 5-10% of women worldwide are affected by PCOS. The prevalence varies among different ethnic groups and geographical regions.

MORTALITY RATE

Although PCOS itself is not life-threatening, it can lead to several complications that increase the risk of mortality. Women with PCOS are more likely to develop conditions such as type 2 diabetes, cardiovascular disease, and endometrial cancer. However, with early diagnosis and appropriate management, the mortality rate associated with PCOS-related complications can be significantly reduced.

SIGN and SYMPTOMS

PCOS presents with a wide range of signs and symptoms, which may vary among individuals. Common manifestations include irregular menstrual cycles, excessive hair growth (hirsutism), acne, weight gain or difficulty losing weight, and infertility. Additionally, women with PCOS may experience mood swings, depression, and anxiety.

RISK FACTORS

Several risk factors contribute to the development of PCOS. These include a family history of PCOS, obesity or excess weight, sedentary lifestyle, insulin resistance, and hormonal imbalances. Furthermore, certain conditions such as obstructive sleep apnea and thyroid disorders are associated with an increased risk of PCOS.

DIAGNOSIS

Diagnosing PCOS involves a thorough medical history evaluation, physical examination, and laboratory tests. Common diagnostic criteria include irregular menstrual cycles, clinical signs of androgen excess, and ultrasound evidence of polycystic ovaries. Blood tests may be conducted to assess hormone levels, lipid profile, and glucose metabolism to rule out other underlying conditions.

TREATMENT

The management of PCOS focuses on alleviating symptoms, preventing complications, and improving overall health. Lifestyle modifications, including regular exercise, a balanced diet, and weight loss if overweight, are the first-line approach. Medications, such as CLOMIPHENE CITRATE are drug of choice in pcos patients. Fertility treatments can also assist women with PCOS who are trying to conceive.

CONCLUSION

Polycystic Ovary Syndrome (PCOS) is a common hormonal disorder that affects women worldwide. Early diagnosis, proper management, and a multidisciplinary approach involving healthcare professionals are essential for effectively treating PCOS and reducing the risk of associated complications. By raising awareness and providing comprehensive care, we can empower women with PCOS to lead healthier lives and overcome the challenges posed by this condition.

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AKANSH SHRIVASTAV
5th Year 9th Semester (2019-2024)

GOUT

INTRODUCTION

Gout is a form of inflammatory arthritis that causes pain and swelling in your joints. Gout happen when there's a buildup of uric acid in your body.
Most commonly it involves 1st metatarsophalangeal joint and can affect other joints including, ankles, elbow, wrist etc.

PATHOPHYSIOLOGY

UNDER EXCRETION / OVERPRODUCTION OF URIC ACID
↓
HYPERURECEMIA
↓
MONOSODIUM URATE CRYSTAL DEPOSITION IN THE JOINT
↓
ENGULFED BY SYNOVIAL CELL IN JOINT
↓
RELEASE OF CYTOKINES (IL-6/8 , TNFα)
↓
RELEASE OF INFLAMMATORY CELLS THAT SECRETE GLYCOPROTEIN
↓

1. LEADS TO LACTIC ACIDOSIS – ACIDIC ENVIRONMENT MORE DEPOSITION OF URATE CRYSTAL

2. ACTIVATE LYSOSOMAL ENZYME – JOINT DESTRUCTION

CLINICAL FEATURES

MOST COMMONLY –

- ✓ 1st MTP joint involved (PODAGRA)
- ✓ At night – Severe attack of pain
- ✓ Features of acute inflammation – Redness, swelling, tenderness
- ✓ Stiffness

RISK FACTORS

- ✓ Obesity or overweight
- ✓ Alcohol
- ✓ Red meat
- ✓ Drugs
- ✓ Kidney disease
- ✓ H/O surgery

DIAGNOSIS

Medical history and physical examination
Synovial fluid analysis- Increased in total lymphocyte count /Needle shaped Na+ urate crystal

Negative birefringence

- ✓ Serum uric acid
- ✓ X ray
- ✓ USG
- ✓ CT – DUAL ENERGY CT SCAN
- ✓ MRI

TREATMENT

IN ACUTE GOUT

- ✓ NSAIDS – IBUPROFEN,DICLOFENAC
- ✓ STEROID – Oral or IV
- ✓ COLCHICINE

COMPLICATIONS

- ✓ Tophi
- ✓ Renal stones
- ✓ Pyelonephritis
- ✓ Joint damage and deformity
- ✓ Psychological

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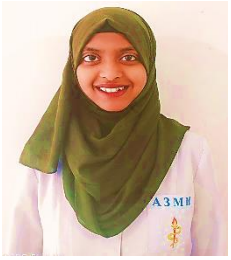

MARIYA SAFOORA
5th Year 9th Semester (2019-2024)

VALVULAR HEART DISEASES (A Brief Overview)

INTRODUCTION:

Valvlar heart disease is when any valve in the heart has damage or is diseased. This article provides an information on valvular diseases, it's occurrence, causes, risk factors, development process, diagnosis, treatment and concluding summary of the topic.

OCCURRENCE:

About 2.5 % of the US population has valvular heart disease, but it is more common in older adults. about 13% of people born before 1943 have valvular heart disease.

MORTALITY:

Severe aortic stenosis with symptoms 50% survival rate at one year 14. severe iotic regurgitation 2.2% mortality rate per year 15. severe mitral stenosis 72% survival at one year.Severe mitral regurgitation 61% survival at five years. Severe tricuspid regurgitation approx 64% survival at one year.

CAUSES:

Healthy heart valve leaflets are able to fully open and close the valve during the heartbeat ,but diseased valves might not fully open and close. Any valve in the heart can become diseased but the aortic valve is most commonly affected.Diseased valves can become leaky where they don't completely close this is called regurgitation if this happens blood leaks back into the chamber that it came from and not enough blood can be pushed forward through the heart. The other common heart valve condition happens when the opening of the valve is narrowed and stiff and the valve is not able to open fully when blood is trying to pass through: this is called stenosis.Some conditions that can cause valvular heart diseases are rheumatic disease, endocarditis, congenital heart valve , heart failure athero sclerosis, aortic aneurysm ,high blood pressure etc.Some autoimmune diseases such as lupus, marfan syndrome can also affect heart valves.

DEVELOPMENT PROCESS:

Calcification of the leaflets pf aortic valve with increasing age,increased lipoprotein deposition , osteogenesis imperfecta is a disorder in formation of type 1 collagen and can also lead to chronic aortic regurgitation.

DIAGNOSIS:

The heart murmurs are used to diagnose ,while listening to your heartbeat depending on the location of the murmur it's sound and it's rhythm we may determine which valve is affected and what type of problem is it either regurgitation or stenosis. Instrumental methods like echocardiography is also used to diagnose.

TREATMENT:

If the condition isn't not too severe,it might be managed with medicines to treat the symptoms.If the valve is more seriously diseases ,surgery is recommended.The valve is replaced by either opening the heart during surgery or replacing the valve without having to open the heart during surgery.We can shape rebuild ,trim the flaps or fix chords to attach them to heart.

CONCLUSION:

Regular check up is necessary specially for the patients of hypertension,any autoimmune disorder and these conditions leading to heart diseases. Awareness should be spread for good healthy diet ,avoid smoking ,good skin and dental hygiene etc.

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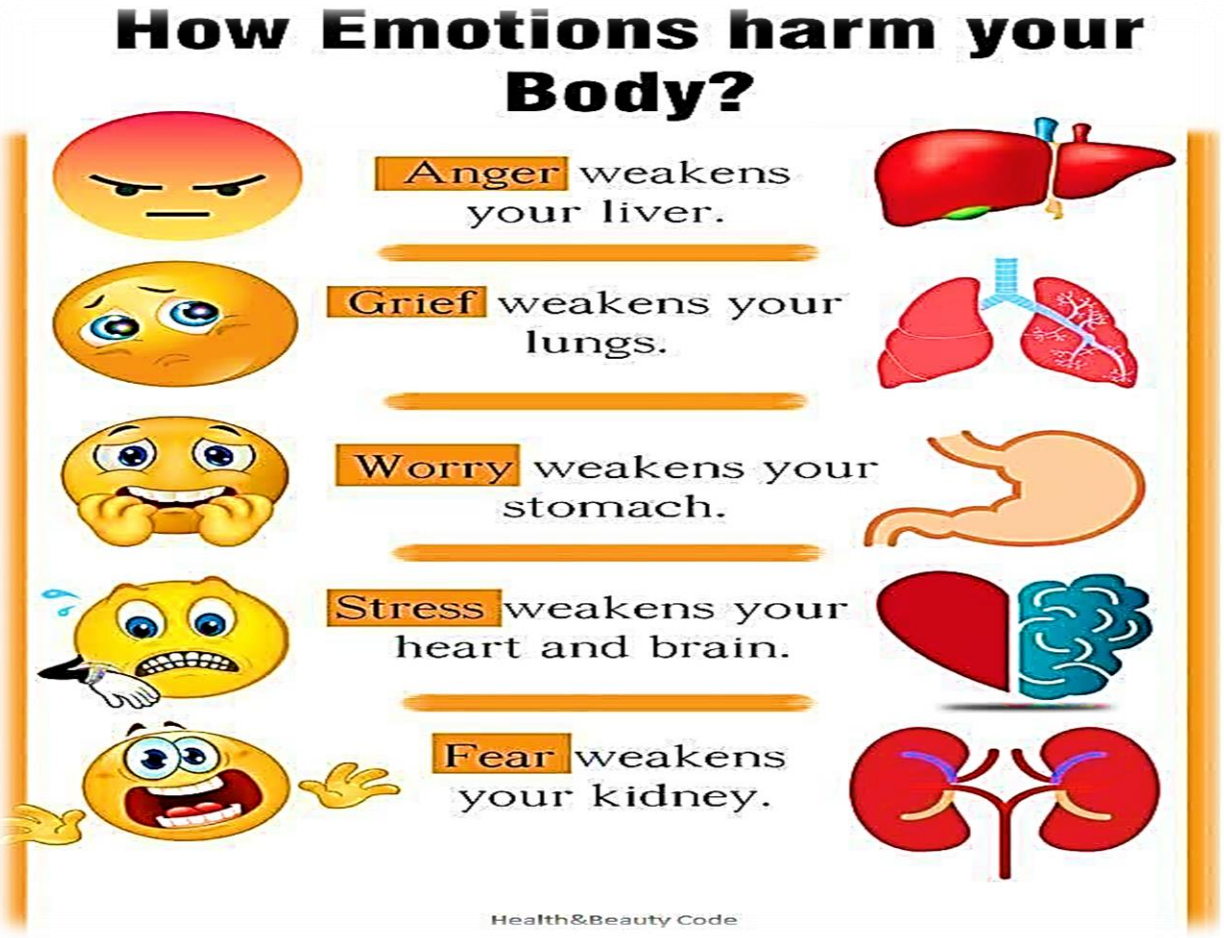

MUHAMMAD AMMAR ARSHAD
5th Year 9th Semester (2019-2024)

BRUGADA SYNDROME

OVERVIEW

Brugada syndrome is named after two Spanish brothers, Pedro and Josep Brugada, who recognized a specific pattern of ventricular fibrillation on the electrocardiogram or ECG, of previously healthy individuals who had a sudden death!

DEFINITION:

It is a rare genetic disorder that affects the way electrical signals pass through the heart.

ETIOLOGY:

- ✓ Brugada syndrome is inherited in an autosomal dominant pattern
- ✓ The gene SCN5A regulates the electrical activity of the heart. The defect in this gene results in irregular heartbeats, leading to abnormal heart rhythm (ventricular fibrillation).
- ✓ A faulty sodium ion channel affects the heart cell's ability to conduct an action potential. So the mutation results in some regions of the heart having abnormal repolarization.

EPIDEMIOLOGY:

- ✓ The prevalence of Brugada Syndrome is approximately 3 to 5 per 10,000 people.
- ✓ Brugada syndrome is approximately 8 to 10 times more common in males than females.

RISK FACTORS:

- ✓ Biological Males, More common in Asia than North America and Europe.

CLINICAL SIGNS AND SYMPTOMS:

- ✓ Approximately 80% of Brugada syndrome patients who develop ventricular tachycardia or ventricular fibrillation experience syncope.
- ✓ Palpitations and dizziness.

Note: 72% of those with Brugada syndrome will not show any symptoms, and 28% will not have a family history of sudden cardiac death.

DIAGNOSE

LAB TESTING	Genetic Testing to confirm the diagnose
ECG	ST Elevation. (Ventricle Strain
	Right Bundle Branch Block (Ventricles aren't depolarize normally)

TREATMENT:→Surgery→ Implanted Cardiac Defibrillator (ICD).

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GULSHAN
5th Year 9th Semester (2019-2024)

FILARIASIS / ELEPHANTASIS

INTRODUCTION

Filariasis is a disease caused by a chronic mosquito-borne parasitic infection. Chronic infection can lead to swelling of the extremities, hydroceles, and testicular masses It is the second-largest cause of permanent deformity and disability behind leprosy worldwide. Lymphatic filariasis (LF) is currently considered a neglected tropical disease. The Global Programme to Eliminate Lymphatic Filariasis is providing mass drug administrations (MDA) to populations in endemic areas in a push to eradicate this disease. Several programs exist to encourage participation with MDA.

ETIOLOGY

Filariasis is caused by at least three species of nematode parasites (Wuchereria bancrofti, Brugia malayi, and Brugia timori) and is transmitted to 5 genera of mosquitoes including Aedes, Anopheles, Culex, Mansonia, and Ochlerotatus.

EPIDEMIOLOGY

It affects 120 million people in 72 countries worldwide, mostly in the tropics and subtropical climates of Asia, Africa, the Western Pacific, South America, and the Caribbean. Four countries in America are endemic: Haiti, Dominican Republic, Guyana, and Brazil . One-third of children in endemic regions are asymptomatically infented with W. bancrofti.Half of the patients infected are in their 30s or 40s, and there is a 10:1 predilection for men to women

PATHPHYSIOLOGY

Humans are the primary reservoir for this parasitic disease, and mosquitoes are the vector. The mosquito deposits larvae into the bloodstream. They take up residence in the lymph nodes and grow into adult worms. The larvae have a predilection to deposit in femoral lymph nodes. They undergo sexual reproduction, and females give birth to countless microfilariae, which are dumped into circulation in a diurnal pattern. Females can give off eggs for approximately 5 years, and adults can live up to 9 years.With the proliferation of adult worms, the lymphatics become occluded, which disrupts the lymphatic drainage and increases the susceptibility to repeated infections - most notably streptococcal and fungal infections. This acute-on-chronic inflammation leads to fibrosis and remodeling of the lymphatics, further perpetuating contractile dysfunction and leading to the dermal skin changes seen with elephantiasis.

HISTOPATHOLOGY

Brugia and Wuchereria species are similar in morphology and are the main cause of filariasis. They can be identified to the genus level using size, body wall composition, thickness, and morphology of the cuticle. The presence of small filarial worms in lymph nodes is

pathognomonic for either Wuchereria or Brugia. Adult worms are typically found in lymph nodes in the groin or neck, whereas microfilariae are typically found in the peripheral blood.

The adult worms typically range in size from 45 to 100 micrometers in diameter and are typically found in lymph node cross-section. Their descriptions include "thin, smooth cuticle which is thickened over lateral chords, three or four well-developed, low, broad muscle cells per quadrant, and relatively broad, flat lateral chord.

Microfilariae can be seen with a blood smear or other peripheral blood sample that is stained with either Giemsa or hematoxylin and eosin (H&E) stain. The blood samples should be taken after 8 pm. The microfilariae vary in size from 200 to 300 micrometers in length and 2 to 8 micrometers in diameter and are identified by the terminal and subterminal nuclei in the tail region.

HISTOLOGY and PHYSIOLOGY

The most common condition of filariasis is a hydrocele. Children are often asymptomatic and typically present after the onset of puberty and likely into the 2nd or 3rd decade of life.

Additional manifestations include:

Filariatic fever - manifests with lymphangitis and lymphadenitis with nonspecific symptoms including headache, fever, chills, and general malaise.

Filarial abscess - may form causing localized swelling and pain until rupture, which results in the discharge of dead adult worms. Granulomatous reactions can lead to lumps in subcutaneous tissues.

Acute dermatolymphangioadenitis (ADL) - repeated bouts of lymphangitis causing lymphedema.

Lymphedema - graded based on the extent of the condition

Grade I: Extremity pitting edema, reversible

Grade II: Extremity pitting or nonpitting edema, nonreversibe

Grade II: Nonpitting, nonreversible edema, with skin thickening

Grade IV: Nonpitting, nonreversible, thickened and nodular appearance of the skin, classified as elephantiasis.

Tropical pulmonary eosinophilia - an immune response to filarial infection. It causes pulmonary restrictive lung disease, wheezing, shortness of breath, and eosinophilia.

MEDICAL TREATMENT

Diethylcarbamazine (DEC) has traditionally been recommended as potential monotherapy; however, it is to be avoided if there is coinfection with Loa loa or onychomycosis as it can worsen the progression of eye disease and can cause encephalopathy. A single combined dose of ivermectin, albendazole, and DEC resulted in clearance of microfilaria in 96% of affected patients for up to 3 years and is currently recommended by the World Health Organization (WHO) as triple therapy in areas not endemic with Loa loa.] Doxycycline is preferred in areas co-endemic with Loa loa and has also shown the ability to slow the inflammation and fibrosis that leads to worsening lymphedema. Doxycycline also treats Wolbachia, a genus of symbiotic bacteria that inhabit nematodes.

There is currently no vaccine for filariasis, but efforts are ongoing to develop one

SURGICAL TREATMENT

Surgical treatments exist for the debulking of skin and creating lymphovenous anastomosis to improve drainage. Topical coumarin and flavonoids were shown to be effective in reducing

lymphedema. It is thought that increased macrophage activity leads to the reuptake of proteinaceous material.

A case report documented the success of ablative carbon dioxide laser treatment of skin lesions and lymphocutaneous fistulas, which resulted in significant improvement of skin lesions. It works via causing thermal damage to dermis resulting in remodeling of superficial tissue and dermal tightening. This was done in a patient with non-filarial elephantiasis but could have an application in filarial disease.

CHRONIC MANAGEMENT

Lymphedema can progress due to repeated attacks of adenolymphangitis even in the absence of LF. Strategies targeting lymphedema progression include working with patients on skin hygiene, wearing comfortable shoes, using compressive bandages, pneumatic compression, regular washing with soap and water, limb elevation, cold/heat therapy, and antibiotic and antifungal creams to prevent flares of lymphangitis.

DIFERENTIAL DIAGNOSIS

The differential diagnosis includes:

Several zoonotic filariasis including Onchocerca, Dirofilaria, Brugia, Dipetalonema, Loaina, Meningonema

Lymphoma

Testicular neoplasms

Congenital abnormalities of lymphatics

Pelvic malignancy

Damage to lymph system secondary to surgery or radiation

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PAVAN DADARAO NARWADE
5th Year 9th Semester (2019-2024)

SCABIES

OVERVIEW

Human scabies is an intensely pruritic skin infestation caused by the host-specific mite Sarcoptes scabiei hominis, which is primarily transmitted via direct human-to-human contact. The female scabies mite burrows into the superficial skin layer, causing severe pruritus, particularly at night. Approximately 300 million cases of scabies are reported worldwide each year.

ETIOLOGY

Pathogen: Sarcoptes scabiei var. hominis Transmission

1. Highly contagious
2. Typically via direct physical (skin-to-skin or sexual) contact
3. Rarely indirect transmission (e.g., sharing textiles such as bedding, towels, or clothes)
4. Commonly affects children and individuals living closely with other people (e.g., in nursing homes or jails)

Risk factors: crowded living conditions (e.g., institutions such as nursing homes, child care facilities, and prisons)

PATHOPHYSIOLOGY

The fertilized, female mite tunnels into the superficial skin layer (stratum corneum), forming burrows in which she lays her eggs and deposits feces (scybala).

After 2 months, the female parasite dies on site.

Following a period of 3 weeks, the larvae mature into adult mites, maintaining the infestation cycle.

The excretions of the mites and their decomposing bodies contain antigens which cause an immunological response (see type IV hypersensitivity reaction), presenting as severe pruritus and excoriations.

CLINICAL FEATURES

- ✓ Incubation period: approximately 3–6 weeks following infestation.
- ✓ Intense pruritus that increases at night
- ✓ Burning sensation
- ✓ Skin lesions

- ✓ Elongated, erythematous papules
- ✓ Burrows of 2–10 mm in length
- ✓ Scattered vesicles filled with clear or cloudy fluid
- ✓ Excoriations, pustules, and secondary infection
- ✓ Bullous or nodular formation (especially in children)
- ✓ Formation of crusts
- ✓ Post-inflammatory hyperpigmentation

Predilection sites

- ✓ Wrists (flexor surface)
- ✓ Medial aspect of fingers
- ✓ Interdigital folds (hands and feet)
- ✓ Male genitalia (e.g., scrotum, penis)
- ✓ All other intertriginous areas of the skin (anterior axillary fold, buttocks)
- ✓ Areas surrounding the nipple (mamillary region)
- ✓ Periumbilical area or waist
- ✓ Knees (flexor surface)
- ✓ Elbows
- ✓ Feet (dorsal and lateral aspect)
- ✓ Additionally in children, elderly persons, and immunosuppressed patients: scalp, face, neck, under the nail, palms of hands, and soles of feet

SUBTYPE & VARIANT

- ✓ Crusted scabies (Norwegian scabies)
- ✓ Definition: a rare, severe, and highly contagious form of scabies that presents with a large number of scabies mites and eggs on the skin
- ✓ Epidemiology: typically occurs in immunosuppressed (e.g., HIV), debilitated, or elderly patients

Clinical features

-Slightly pronounced or absent pruritus
-Lesions
-Thick crusts or scales on an erythematous base with irregular borders
-May have a wart-like appearance and fissures
-Nail changes (i.e., dystrophic, thick)

Location

-Typical areas include the scalp, hands, and feet
-May involve the whole integument (especially if left untreated)
-Treatment: rapid and aggressive medical therapy with a scabicidal agent to prevent an outbreak

DIAGNOSTICS

- ✓ Typical history and skin lesions on clinical examination (see “Symptoms/clinical findings” above)
- ✓ Environmental diagnosis (direct contact with infected persons)
- ✓ Detection of mites, larvae, ova, or mite feces
- ✓ Revealed in dermoscopy

- ✓ Microscopic examination of the skin
- ✓ Skin scraping and histology.

Scabies may be mistaken for eczema, especially as the topical use of glucocorticoids initially alleviates symptoms.

TREATMENT

Medical therapy: topical application of a scabicidal agent

- ✓ Drug of choice: permethrin 5% lotion
- ✓ Mechanism of action: inhibition of voltage-gated sodium channels in the mite → delayed repolarization of neurons → paralysis and death of the mite

Alternatives

- ✓ Lindane 1% lotion: in the case of treatment failure or side effects
- ✓ Mechanism of action: blocks GABA channels → neurotoxicity in the mite
- ✓ Oral ivermectin: especially indicated in large outbreaks or severe forms of scabies

Others

- ✓ crotamiton 10% cream or lotion, sulfur ointment
- ✓ Symptomatic treatment of pruritus
- ✓ Oral antihistamines
- ✓ Possible topical corticosteroid (e.g., hydrocortisone) if severe
- ✓ All close contacts should receive prophylactic treatment.

General Measures

- ✓ Wash all textiles (e.g., clothing and bedding) (day 1 and day 8 post-treatment)
- ✓ All contacts within the household should be treated for scabies infestation even if asymptomatic.

PREVENTIONS

The local health care department should be notified of a suspected threat of community outbreak of scabies and the following measures implemented for:

Single noncrusted case

- ✓ Following direct contact with the skin or a patient with scabies, hands should be thoroughly washed (also underneath the nails), then disinfected with an agent that is effective against scabies mites.
- ✓ Appropriate identification and treatment of scabies in the affected individual, with adequate follow-up. All contacts (including within the hospital) should receive prophylactic treatment.
- ✓ Avoid skin-to-skin contact for 8 hours after initial treatment.
- ✓ Increased surveillance for new cases

Multiple noncrusted cases

- ✓ In addition to the above, an institution-based awareness and education program
- ✓ Adequate recording of epidemiological data

Crusted scabies case: same as above, but more rapid and aggressive approach

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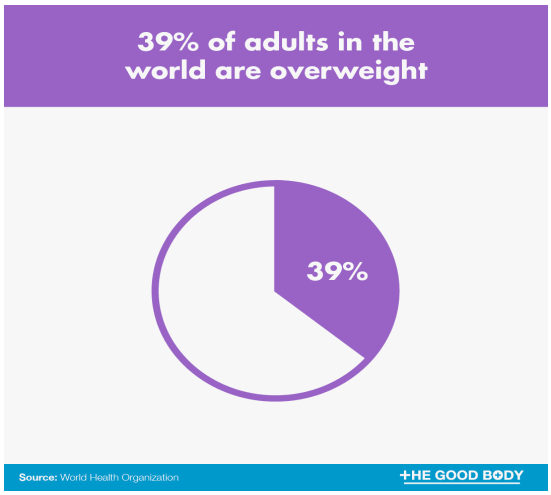

DEVANSHI
5th Year 9th Semester (2019-2024)

LEUKEMIA

INTRODUCTION

The production of abnormal leukocytes define leukemia in either a primary or secondary . They can be classified as acute or chronic based on the rapidity of proliferation and myeloid or lymphoid based on the cell of origin.

•**Acute lymphoblastic leukemia (ALL):** ALL is seen in patients with the blastic transformation of B and T cells.

•**Acute myelogenous leukemia (AML):** AML is characterized by greater than 20% myeloid blasts and is the most common acute leukemia in adults.

•**Chronic lymphocytic leukemia (CLL):** CLL occurs from the proliferation of monoclonal lymphoid cells.

•**Chronic myelogenous leukemia (CML):** CML typically arises from reciprocal translocation and fusion of BCR on chromosome 22 and ABL1 on chromosome 9.

ETIOLOGY

Multiple genetic and environmental risk factors are identified in the development of leukemia. Exposure to ionizing radiation is associated with an increased risk of multiple leukemia subtypes.Exposure to benzene is a risk factor for leukemia in adults, particularly AMLPrevious exposure to chemotherapy, especially alkylating agents and topoisomerase II inhibitors, increases the risk for acute leukemia later in life.A history of any hematologic malignancy is a risk factor for subsequently developing another subtype of leukemia.Viral infections (e.g., human T-cell leukemia virus, Epstein Barr virus) are linked with subtypes of ALL.Several genetic syndromes (e.g., Down syndrome, Fanconi anemia, Bloom syndrome, Li-Fraumeni syndrome) are associated with an increased risk of AML and ALL.

Epidemiology; GLOBOCAN, which is a global observatory for cancer trends, showed a global incidence of 474,519 cases, with 67,784 in North America. The age-standardized rates are around 11 per 100,000, with a mortality rate of about 3.2

Pathophysiology

Leukemia occurs due to the malignant transformation of pluripotent (i.e., it can give rise to both myeloid and lymphoid precursors) hematopoietic stem cells. Rarely, it can also involve a more committed stem cell with limited self-renewal capacity. **Acute Leukemia**In ALL, chromosomal translocation or abnormal chromosome numbers can lead to mutations in precursor lymphoid cells leading to lymphoblasts. Common mutations include t(12;21) and t(9;22)**Chronic Leukemia**Chromosomal abnormalities in hematopoietic stem cells that are precursors to leucocytes are the most common cause of chronic leukemia.

Evaluation

The workup of leukemia is very involved, and multiple tests are needed to confirm a diagnosis and, subsequently, to stage the disease. Helpful initial studies include a

CBC, comprehensive metabolic panel, liver function tests (LFT), and coagulation panel, which are often followed by a peripheral blood smear evaluation and a bone marrow biopsy and aspiration.In most other cases, more detailed analyses with flow cytometry, cytogenetics, and FISH testing are required to distinguish between subtypes.A bone marrow aspiration and biopsy are often required for the diagnosis of acute leukemias. For chronic leukemias, peripheral blood evaluation is often enough, and an invasive bone marrow biopsy may not be needed

Treatment / Management

APL: APL patients typically present with bleeding diathesis with increased coagulation parameters (elevated PT, aPTT) and low fibrinogen. Peripheral smear shows a predominance of myeloid blasts with Auer rods. It is important to start the treatment with ATRA (all-trans-retinoic acid) when APL is suspected rather than awaiting confirmatory tests with FISH. **AML:** Standard therapy for AML is well known as the '7+3' regimen, which includes a 7-day course of cytarabine continuous infusion with a 3-day course of an anthracycline (either daunorubicin or idarubicin)s.**ALL** ALL is divided into B or T lymphocyte variants based on the lymphoblast origin and the presence of >20% lymphoblasts in peripheral smear or BM. The presence or absence of the Ph chromosome is the most important molecular marker leading to therapeutic implications in treating ALL.**CML:** At 3 months: BCR-ABL1 [International Scale (IS)] at ≤10 percent and/or ≤35% Ph-positive metaphase cellsAt 6 months: BCR-ABL1 (IS) at ≤1 percent or/and 0 % Ph-positive metaphase cell At 1 year : BCR-ABL1 (IS) ≤0.1 percent

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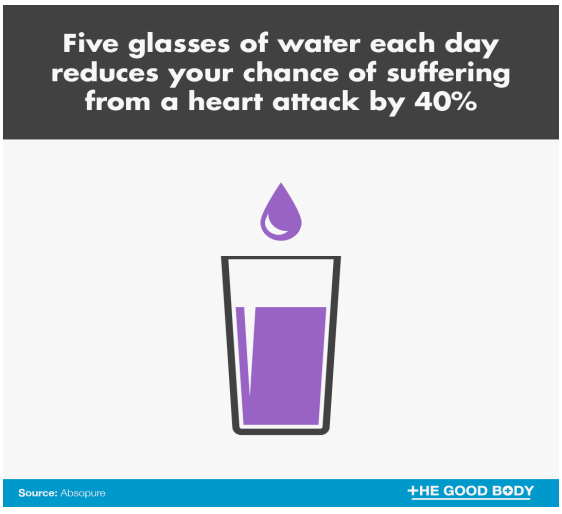


VIMAL IMRAN
5th Year 9th Semester (2019-2024)

LYME DISEASE ,RARE DISEASE

Lyme disease is an infectious disease caused by the bacterium Borrelia burgdorferi. It is primarily transmitted to humans through the bite of infected black-legged ticks, commonly known as deer ticks, which are found in certain regions of North America, Europe, and Asia.

ETIOLOGY

Here are some key points about the etiology of Lyme disease:

1; Borrelia burgdorferi

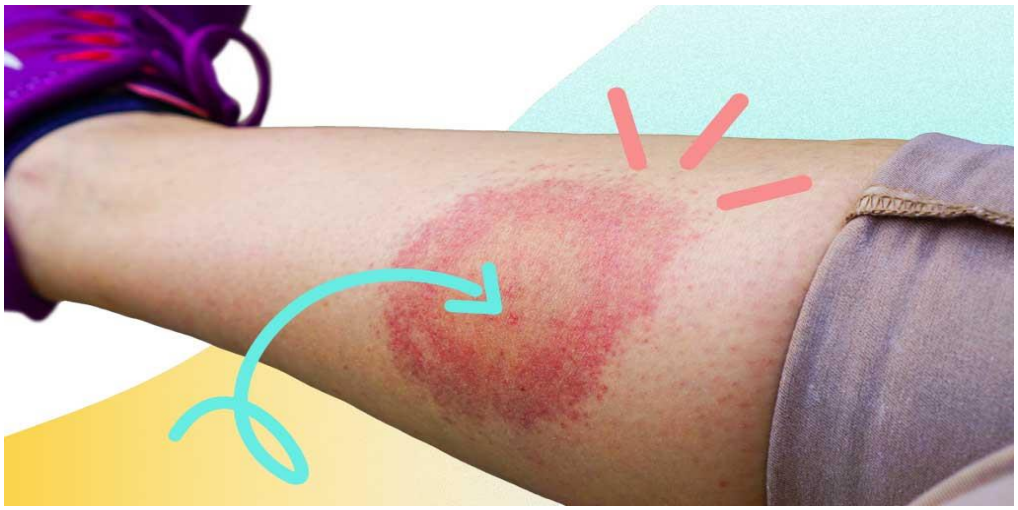
2; Reservoir hosts:

3; Geographic distribution

SYMPTOMS

The symptoms of Lyme disease can vary and may appear in stages. The early stage of the disease, known as early localized Lyme disease, typically occurs within 3 to 30 days after a tick bite. Common symptoms include:

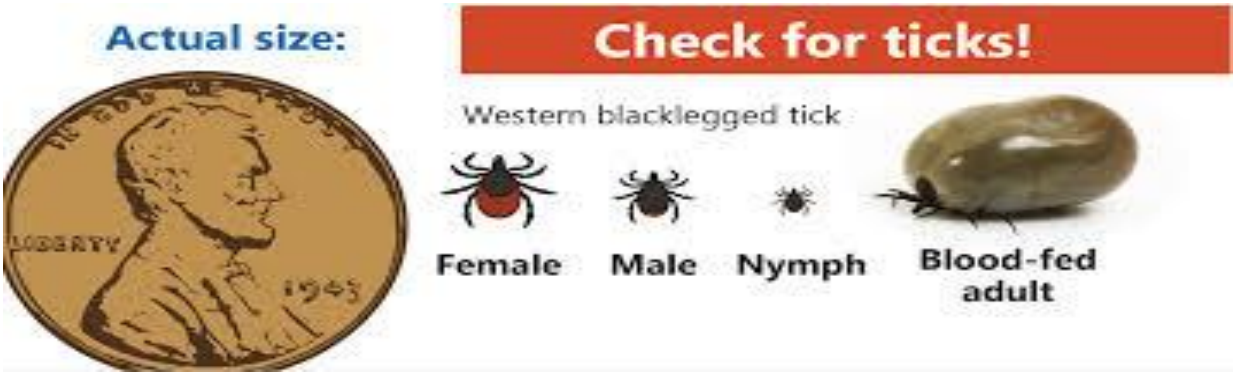
Bull's-eye rash: The most characteristic and recognizable symptom is a circular red rash that expands slowly over time. It may resemble a bull's-eye, with a red outer ring surrounding a clear area and then a red center. However, not all individuals with Lyme disease develop this rash.



Flu-like symptoms: Fever, fatigue, headache, muscle and joint aches, and swollen lymph nodes can occur.

In the later stages of the disease, if left untreated, symptoms can progress and affect various systems in the body. These may include joint pain and swelling, neurological symptoms (such as numbness, tingling, or muscle weakness), heart problems, and cognitive difficulties.

SIZE



PATHOGENESIS

Here are some key points about the etiology of Lyme disease:

Borrelia burgdorferi: This bacterium is primarily transmitted to humans through the bite of infected black-legged ticks, commonly known as deer ticks. Ticks become infected with Borrelia burgdorferi by feeding on infected animals, such as mice, squirrels, or deer. The bacterium resides within the midgut of ticks and can be transmitted to humans when an infected tick bites and remains attached for an extended period, usually 24 to 48 hours or more.

Reservoir hosts: The bacterium maintains its natural cycle in nature through reservoir hosts, which are typically small mammals, particularly rodents, that carry and harbor the bacteria. Ticks become infected by feeding on these reservoir hosts, and subsequently, infected ticks can transmit the bacterium to humans during subsequent blood meals.

GEOGRAPHIC DISTRIBUTION

Lyme disease is prevalent in certain regions of North America, Europe, and Asia where infected ticks are found. In the United States, it is most commonly reported in the Northeast, Mid-Atlantic, and upper Midwest regions, but cases have been documented in other states as well.

DIAGNOSIS

- ✓ The diagnosis of Lyme disease involves a combination of clinical evaluation,
- ✓ Medical history (including possible exposure to ticks),
- ✓ Laboratory testing.
- ✓ Blood tests, such as enzyme immunoassay (EIA) and Western blot, are commonly used to detect antibodies against the bacterium.
- ✓ However, these tests may not always be reliable in the early stages of the disease, and results can sometimes be inconclusive.

TREATMENT

1. Early localized or early disseminated Lyme disease:

Oral antibiotics: In the early stages of the disease, when the infection is localized or has disseminated to a limited extent, oral antibiotics are usually prescribed. The most commonly used antibiotics include doxycycline, amoxicillin, or cefuroxime. The treatment duration is typically 10 to 21 days.

2. Lyme arthritis or more severe manifestations:

Intravenous antibiotics: In some cases, particularly when there is joint involvement (Lyme arthritis) or more severe manifestations of the disease, intravenous (IV) antibiotics may be necessary. IV antibiotics are usually administered for a period of 14 to 28 days. Ceftriaxone is commonly used as an IV antibiotic for Lyme disease.

3. Treatment for persistent or recurrent Lyme disease:

Prolonged antibiotic therapy: In cases where Lyme disease persists or recurs despite initial treatment, longer courses of antibiotics may be considered. This is known as prolonged antibiotic therapy. The choice of antibiotics and duration of treatment in these cases can vary and should be determined by a healthcare professional experienced in managing Lyme disease.

In addition to antibiotics, supportive care may be provided to manage symptoms such as pain, fever, and inflammation. Regular follow-up with healthcare providers is essential to monitor treatment response and address any ongoing concerns.

PREVENTION

Prevention of tick bites and prompt removal of ticks within 24 to 48 hours of attachment are also important in reducing the risk of Lyme disease. If you suspect you have been bitten by a tick or have symptoms consistent with Lyme disease, it's important to seek medical evaluation and appropriate testing for accurate diagnosis and treatment.

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