**SUMMER SEMESTER FINAL TERM EXAM**

**Course Title: Medicine I Instructor: Dr. Ahmed Hayat**

 **Marks: 50**

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**Q1- Define influenza its sign & symptoms , prevention and treatment. (20)**

**ANSWER:**

Influenza is a disease that happens when the body is infected with a type of influenza virus. This virus attacks the (respiratory system) generally, including the lungs, throat and nose.

The flu attacks young children, older adults, pregnant women and people with chronic disease or weak immune systems are at high risk.

Generally talking, influenza is not harmful. Most people get better with it within a week or a little extra. However, people generally get sick badly from the flu, and it can lead to other complications such as ear infections and pneumonia. People over the age of 65, young children, and pregnant women are at greater risk of developing complications. And it’s mostly aged people that die from pneumonia.

**Types of influenza viruses:**

There are four types of influenza viruses: A, B, C and D. Human influenza A and B viruses cause seasonal epidemics of disease and is also known as the flu season that occurs every winter. Influenza A viruses are the only influenza viruses known to cause flu pandemics, i.e., global epidemics of flu disease. A pandemic can occur when a new and very different influenza A virus emerges that both infects people and has the ability to spread efficiently between people. Influenza type C infections generally cause mild illness and are not thought to cause human flu epidemics. Influenza D viruses primarily affect cattle and are not known to infect or cause illness in people.

type A is often essentially the most harmful and has the most severe signs and symptoms in humans. And every year a new strain comes out that differs from the previous year. This is why you need to get a new flu shot every year. Sometimes the completely different strains of influenza are named after letters and numbers. Influenza viruses of type (A) have the letters H and N in the name to denote the scientific terms hemagglutinin and neuraminidase.

**Influenza virus signs and symptoms:**

Symptoms differ for different people who are affected. However, there are some signs which can be common amongst most people with influenza, such as:

* Fever over 37 degrees
* Cough
* Runny nose
* Body aches
* A headache
* Fatigue and weakness
* Chills and sweats

**Uncommon signs such as**

* Skin rash
* Diarrhea,
* Stomach pain

**Treatment**:

There aren't many influenza treatments if a person is infected. Most medical doctors recommend bed rest and drinking plenty of fluids. AS for people at risk of complications, they need to go to the physician, and they may need to stay in the hospital for care. Although you don’t need antibiotics for viral infections as they are not effective against them. However if the complications are severe like pneumonia or other bacterial infection than antibiotics are prescribed.

Medications for specific symptoms can help. Cough suppressants can be used for cough. Ibuprofen or acetaminophen can be used to treat symptoms of the flu, such as aches and fever. Children and teenagers with flu shouldn't take acetylsalicylic acid (ASA). The combination of influenza and ASA is linked to Reye's syndrome, a rare but serious condition affecting the brain and liver. Many over-the-counter cold medications contain ASA or other salicylates. Antiviral medications oseltamivir and zanamivir are sometimes used to treat the flu. These medications can help shorten the duration of the flu and reduce symptoms and work best if they are taken within 48 hours of the start of symptoms. Antiviral medications are also used to prevent flu infection for some people after they come into close contact with a person who has the flu, such as flu-infected people who live in the same household. Generally, antivirals are not recommended for most people; however, they may be recommended for people at risk for flu complications.

**Prevention**:

There are numerous things you can do to stop getting infected with the influenza virus:

* Flu vaccine
* Wash your hands usually
* Cover your mouth and nose with a tissue or your elbow when sneezing or coughing
* Avoid shaking hands with others
* Avoid being in crowds during flu season

**Q2- Explain osteo arthritis in detail. (20)**

**Answer:**

Osteoarthritis is an idiopathic disease characterized by degeneration of articular cartilage leads to fibrillation, fissures, gross ulceration and finally disappearance of the full thickness of articular cartilage. In Osteoarthritis (OA), the repair mechanisms of tissue absorption and synthesis get out of balance and result in osteophyte formation (bone spurs) and bone cysts. OA is a disease of joints that affects all of the weight-bearing components of the joints which are Articular, Cartilage, Menisci, Bone

OA is the most common form of arthritis and the most common joint disease. Most of the people who have OA are older than age 45, and women are more commonly affected than men.

Commonly Affected joints are Hips, Knees, Feet, Spine, Hands (Interphalangeal joints). Uncommonly Affected Joints are Shoulder, Wrist, Elbow, Metacarpophalangeal joint, TMJ, SI, Ankle. In OA articular cartilage is the main tissue affected and that results in:

* Increased tissue swelling
* Change in color
* Cartilage fibrillation
* Cartilage erosion down to subchondral bone

**Types of OA:**

There are 2 major types of OA and these are:

* Primary or Idiopathic

Most common type. Diagnosed when there is no known cause for the symptoms.

• Secondary: Diagnosed when there is an identifiable cause such as, Trauma or Underlying joint disorder

**Risk factors**:

Conditions that contribute to osteoarthritis are:

1. Age: Age is the strongest risk factor for OA. Although OA can start in young adulthood, if you are over 45 years old, you are at higher risk.
2. Female gender: In general, arthritis occurs more frequently in women than in men. Before age 45, OA occurs more frequently in men; after age 45, OA is more common in women. OA of the hand is particularly common among women.
3. Joint alignment: People with joints that move or fit together incorrectly, such as bow legs, a dislocated hip, or double-jointedness, are more likely to develop OA in those joints.
4. Hereditary gene defect: A defect in one of the genes responsible for the cartilage component collagen can cause deterioration of cartilage.
5. Joint injury or overuse caused by physical labor or sports: Traumatic injury (ex. Ligament or meniscal tears) to the knee or hip increases your risk for developing OA in these joints. Joints that are used repeatedly in certain jobs may be more likely to develop OA because of injury or overuse.
6. Obesity: Being overweight during midlife or the later years is among the strongest risk factors for OA of the knee.

**Diagnosing OA:**

* Medical history
* Physical exam
* X-ray
* Other tests
* Laboratory findings in OA; OA is not a systemic disease, therefore:

-ESR, Chem 7, CBC, and UA all WNL

- Synovial fluid

-Mild leukocytosis (<2000 WBC/microliter) Can be used to exclude gout, CPPD, or septic arthritis if diagnosis is in doubt

**Symptoms of OA:**

OA usually occurs slowly. It may be many years before the damage to the joint becomes noticeable

• Only a third of people whose X-rays show OA report pain or

**other symptoms:**

– Steady or intermittent pain in a joint

– Stiffness that tends to follow periods of inactivity, such as sleep or sitting

– Swelling or tenderness in one or more joints [not necessarily occurring on both sides of the body at the same time]

– Crunching feeling or sound of bone rubbing on bone (called crepitus) when the joint is used

**Severity grading of OA**

|  |  |  |
| --- | --- | --- |
|  | Clinical symptoms  | X-ray appearances  |
| Stage I | Minimal  | Nil or minimal stages |
| Stage II | Mild  | Decreased joint space  |
| Stage III | Moderate  | Decreased joint space and osteophyte formation  |
| Stage IV | Severe  | Decreased joint space, osteophyte formation and malalignment |

**OA management:**

OA is a condition which progresses slowly over a period of many years and cannot be cured. Treatment is directed at decreasing the symptoms of the condition, and slowing the progress of the condition. Functional treatment goals: Limit pain, Increase range of motion, Increase muscle strength, Educate patient about disease and management, Improve function, Control pain, Alter disease process and its consequences

**Treatment**:

* Patient education
* Self-management
* programs
* Weight loss
* PT/OT
* ROM exercises
* Muscle strengthening
* Assistive devices
* Patellar taping
* Appropriate footwear
* Lateral-wedged insoles
* Bracing
* Joint protection and energy conservation
* Pain medications
* Physical therapy
* Walking aids
* Shock absorption
* Re-alignment through orthotics
* Limit strain to affected areas

Pharmacologic:

1. Acetaminophen
2. NSAIDS
* Cox-2 specific inhibitors
* With PPI or misoprostol
1. Nonacetylated salicylate
2. Tramadol
3. Opioids

Topical:

1. Capsaicin
2. Methylsalicylate
3. NSAIDS

Intra-articular:

1. Corticosteroids
2. Hyaluronic acid

Possible structure/disease modifying stuff

– Glucosamine

– Diacerein

– Cytokine inhibitors

– Cartilage repair

– Bisphosphonates

– Degradative enzyme inhibitors

* Tetracyclines, metalloproteinase inhibitors

Surgical treatment options for OA:

1. Proximal Tibial Osteotomy: In the treatment of lower extremity malalignment and osteoarthritis, tibial osteotomy is a procedure that allows for the realignment of the lower extremity and thereby either shifts the weight-bearing access to the healthier portion of the knee or corrects the alignment deformity.
2. Total knee replacement: Knee replacement surgery (arthroplasty) is a common operation that involves replacing a damaged, worn or diseased knee with an artificial joint.

**Q3- Explain Tetralogy of fallot. (10)**

**Answer:**

Tetralogy of Fallot. Tetralogy of Fallot is a combination of four congenital abnormalities. The four defects include a ventricular septal defect (VSD), pulmonary valve stenosis, a misplaced aorta and a thickened right ventricular wall (right ventricular hypertrophy)

**Symptoms**

* A bluish coloration of the skin caused by blood low in oxygen (cyanosis)
* Shortness of breath and rapid breathing, especially during feeding or exercise
* Loss of consciousness (fainting)
* Clubbing of fingers and toes — an abnormal, rounded shape of the nail bed
* Poor weight gain
* Tiring easily during play or exercise
* Irritability
* Prolonged crying
* A heart murmur
* Tet spells: deep blue skin, nails and lips after crying or feeding, or when agitated

**GPE**

Cyanosis, tachypnea, clubbing

Auscultation: heart murmur usually audible at birth - single S2, long cresendo-decresendo systolic murmur at mid & LUSB (usually grade 3-5/6), also with holosystolic regurgitant murmur of VSD

**Diagnosis**

CBC

 - ⁭ hematocrit

ECG

 -RVH, RAD

CXR

 -boot shaped heart, right sided aortic arch

Echocardiogram

 -VSD

**Treatment**

Emergency :

* Oxygen
* Prostaglandin

Definitive:

* Surgical intervention