IQRA NATIONAL UNIVERSITY

MID TERM PAPER

PATHOLOGY

DEPARTMENT: ALLIED HEALTH SCIENCES

COURSE: DPT

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QNO1

Corona virus disease COVID-19

Coronavirus disease is a severe acute respiratory infectious disease caused by severe acute respiratory syndrome corona virus. the disease was first identified in December 2019 in Wuhan, the capital city of china. and has since spread globally, resulting in the ongoing 2019-2020 corona virus pandemic.

Other names :

- Coronavirus,
- COVID,
- 2019-nCov acute respiratory disease,
- Novel corona virus pneumonia.

Usual onset:

2-14 days (typically 5) from exposure.

Causes:

Severe acute respiratory syndrome corona virus 2.

Signs and symptoms:

Common symptoms:

- Fever (88%)
- Dry cough (68%)
- Fatigue (38%)

Uncommon symptoms:

- Headache,
- Loss of smell,
- Nasal congestion,
- Sore throat,
- Coughing up sputum,
- Pain in muscles or joints,
- Chills,
- Nausea and vomiting,
- Diarrhea,
- Shortness of breath.

In severe disease

- Difficulty in walking,
- Confusion,
- Blush face or lips,
- Coughing up blood,
- Decreased white blood cells,
- Kidney failure,
- High fever.

Some patients infected with corona virus may be presented with no symptoms appear or asymptomatic.

Complications:

- Pneumonia,
- Viral sepsis,
- Septic shock
- Acute respiratory distress syndrome,
- Kidney failure etc.

Risk factors:

- Travel,
- Viral exposure.

Frequency:

- 2,165,500 confirmed cases worldwide.

Death rate:

- 145,705 deaths worldwide.

Transmission:

- Virus is primarily spread between people during close contacts,
- Via small droplets produced by coughing or sneezing.
- People may also be infected by touching contaminated surface and then touching their eyes, nose or mouth. the virus can survive on a surface up to 72 hours.it is most contagious during the first three days, although spread may be possible in the later phases.

Prevention:

- Frequent hand washing,
- Maintaining physical distances from others,
- Covering cough and sneezes with a tissue or inner elbow,

- Keeping unwashed hands away from face,
- Use of masks.

Pathology:

Few data are available about microscopic lesions and the pathophysiology of COVID-19.the main pathophysiology findings ar autopsy are

- Macroscopy,
- Pericarditis,
- Consolidation,
- Pulmonary oedema.

Four types of severity of viral pneumonia

- Minor pneumonia,
- Mild pneumonia,
- Severe pneumonia,
- Healing pneumonia.

Management;

People are managed with supportive care, which may include fluid therapy, and supported other affected vital organs. extracorporeal membrane oxygenation has been used to address the issue of respiratory failure, but it benefits are still under consideration.

Personal hygiene and a healthy lifestyle and diet have been recommended to improve immunity.

Supportive treatment may be useful in those with mild symptoms at the early stage of infection.

The WHO and Chinese national health commission have published recommendations for taking care of people who are hospitalized with COVID-19.

Isolation is required for the patient to prevent spread of the disease.

Medication:

There is no specific treatment for this viral infection however ongoing for symptoms some medical professionals recommended paracetamol.

Medication to prevent blood clotting and anticoagulants have been suggested for treatment .

QNo2:

Cancer is disease caused by an uncontrolled division of abnormal cells in a part of the body.

or

A malignant growth of tumor resulting from an uncontrolled division of cells,

or

an evil or destructive practice or phenomenon that is hard to contain or eradicate.

Diagnosis of cancer:

Diagnosing cancer at the earliest at it its earliest stages often provide the best chance of cure.

Health specialist may use one or more approaches to diagnose cancer.

- Physical exam: your doctor may feel areas of your body for lumps that may indicate a tumor. During a physical exam, he or she may look for abnormalities, such as a changes in skin color or enlargement of an organ, that may indicate presence of cancer.
- Laboratory tests: laboratory tests such as urine and blood tests, may help your doctor identify abnormalities that can be caused by cancer. For instance, in people with leukemia, a common blood test called complete blood count may reveal an unusual number or type of white blood cells.
- Imaging test: imaging tests allow us to examine bones and internal organs in noninvasive way, imaging test include CT scan, bone scan, MRI, PET, ultrasound and X-ray, among others.
- Biopsy: during a biopsy physician collects a sample of cells for testing in the laboratory, there are several ways of collecting a sample. Which biopsy procedure is right for you depends on your type of cancer and its location. In most cases, a biopsy is the only way to definitively diagnose cancer'

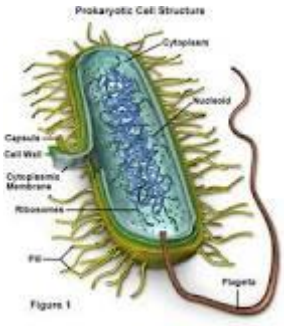
Role of genetics in cancer:

The role of genetic heterogenecity within neoplasms is increasingly recognized as important for understanding the dynamics of cancer progression, cancer stem cells, and therapeutic resistance and there is interest in intratumoral heterogeneity measurements as a potential biomarkers for risk satisfaction.

In this issue of park at el characterize this genetic diversity in a carcinoma situation and in invasive regions from 3 types of human breast cancers and lay the groundwork for translation of these measures of clinic.
Although there are clear suggestions that diversity may be important in the establishment and progression of cancer.
TNM a diagnostic system for cancer:
This is a diagnostic system stage is the TNM system short for tumor, node, and metastasis.
The higher number the bigger the tumor. Node N followed by a number from 0-3 tells you if the cancer has spread to your lymph nodes.

Q NO:3

Structural of bacterial cell wall



Bacteria Cell Structure.

bacteria are prokaryotes, lacking well-defined nuclei and membrane-bound organelles, and with chromosomes composed of a single closed DNA circle. They come in many shapes and sizes, from minute spheres, cylinders and spiral threads, to flagellated rods, and filamentous chains.

How antibiotic kill bacteria:

There are different types of antibiotic, which work in one of two ways: A bactericidal antibiotic, such as penicillin, kills the bacteria. These drugs usually interfere with either the formation of the bacterial cell wall or its cell contents. A bacteriostatic stops bacteria from multiplying.

Mode of action of antibiotics

Some antibiotics work by binding to components involved in the process of DNA or RNA synthesis, which causes interference of the normal cellular processes which will ultimately compromise bacterial multiplication and survival. Examples: quinolones, metronidazole, and Rifampicin. Inhibitors of other metabolic processes