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Assignment : 2

Q: Briefly discuss the following diseases.

- (1) Malaria
- (2) Typhoid
- (3) Dengue
- (4) Hepatitis
- (5) Polio

Answer: (1) Malaria

Definition:

“Malaria is a life-threatening disease caused by parasites that are transmitted to people through the bites of infected female mosquitoes. (Anopheles mosquitoes = vector)”

Symptoms:

- Fever and sweating.
- Chills that shake your whole body.
- Headache and muscle aches.
- Fatigue.
- Chest pain, breathing problems and cough.
- Diarrhea, nausea and vomiting.

Causal Agents:

Malaria is caused by protozoan parasite Plasmodium. Four different species of Plasmodium namely,

- (i) Plasmodium vivax
- (ii) Plasmodium malariae
- (iii) Plasmodium falciparum
- (iv) Plasmodium ovale

all these cause malaria. Malaria caused by Plasmodium falciparum is malignant and fatal.

General Causes:

When a mosquito bites someone who has malaria, the mosquito becomes carrier of parasite (Plasmodium). When that mosquito bites someone else, it transfers the parasite to the other person's bloodstream.

In rare cases, ^{women} ~~(people)~~ who are pregnant and who have malaria can transfer the disease to their children before or during birth.

It's possible for malaria to be passed through blood transfusions, organ donation or transplantation and hypodermic needles.

Treatment :

Antimalarial drugs include ;

- (i) Artemisinin drugs (The best treatment for *Plasmodium falciparum* malaria).
- (ii) Atovaquone
- (iii) Chloroquine (There are parasites that are resistant to this medication.)

Preventive Measures :

- (i) Apply mosquito repellent with DEET (diethyltoluamide) to exposed skin.
- (ii) Drape mosquito netting over beds.
- (iii) Put screens on windows and doors.
- (iv) Treat clothing, mosquito nets, tents, sleeping bags and other fabrics with an insect repellent called permethrin.
- (v) Wear long pants and long sleeves to cover your skin.

Vaccine against Malaria :

The RTS₂S/AS01 vaccine is effective against *Plasmodium falciparum* malaria.

(2) Typhoid Fever

Definition:

“Typhoid fever is a bacterial infection that can spread throughout the body, affecting many organs.”

Symptoms:

Two main symptoms of typhoid are fever and rash. Other symptoms can include:

- (i) Diarrhea
- (ii) Loss of appetite
- (iii) Bloating
- (iv) Nausea
- (v) Weakness
- (vi) Abdominal pain
- (vii) Constipation
- (viii) Headaches

Causal Agents:

Salmonella Bacteria
or Salmonella typhi

General Causes :

- (i) Consuming food or drinks contaminated by bacteria.
- (ii) Contact with an infected person.
- (iii) Poor hygiene.
- (iv) Drinking contaminated water.
- (v) Eating vegetables or fruits washed in contaminated water.

Treatment :

The only effective treatment for typhoid is antibiotics.

- (i) Cipro / ciprofloxacin
- (ii) Chloramphenicol
- (iii) Ampicillin (Amp, Omnipen, Penglobe, Principen)
- (iv) Sulfamethoxazole / trimethoprim.

Preventive Measures :

Avoid contaminated food and water. Access to safe water and adequate sanitation, hygiene among food handlers and typhoid vaccination are all effective in preventing typhoid fever.

Vaccine: Ty21a vaccine

(3) Dengue

Definition:

“Dengue fever is an illness spread by the bite of mosquitos infected with a dengue fe virus.”

Symptoms:

- (i) Rash
- (ii) Intense pain behind eyes.
- (iii) Nausea or vomiting
- (iv) Muscle, bone and joint pain
- (v) Abdominal pain
- (vi) Throwing of blood or Blood in poop.
- (vii) Nose bleeds or bleeding gums.
- (viii) Extreme tiredness, restlessness or irritability

Causal Agents:

Dengue is caused by: Dengue Virus (RNA virus)
This virus is a member of the viral family Flaviviridae, having 4 serotypes DENV-1, DENV-2, DENV-3, DENV-4.

Vectors:

Aedes aegypti and Aedes albopictus.

General Causes:

- (i) People who have traveled to areas with dengue outbreaks and bring the virus back to their home country.
- (ii) Pregnant mother passing the virus to their unborn child.
- (iii) Accidental exposures to the virus in laboratory setting.

Treatment:

- (i) Bed rest.
- (ii) Medication to reduce fever and alleviate pain, such as acetaminophen.
- (iii) Platelet transfusion in severe cases.
- (iv) Observation and monitoring of platelet count and hematocrit level.
- (v) In some cases, hospitalization may be necessary to manage severe symptoms and prevent complications.

Vaccine:

Dengvaxia (CYD-TDV)
for 9-45 years of age.

Preventive Measures:

We can adopt following preventive measures against dengue;

- i) Wearing protective clothing
- ii) Apply insect repellent.
- iii) Avoid peak mosquito hours
- iv) Eliminate breeding sites.
- v) Use mosquito nets.
- vi) Install window and door screen.
- vii) Use air conditioning.
- viii) Wear mosquito repellent clothing.
- ix) Avoid dark colours.
- x) Stay at home / stay informed.

(4) Hepatitis

Definition:

“Hepatitis is defined as an inflammation of the Liver”

Symptoms:

- (i) Muscle and joint pain.
- (ii) Feeling (sick) sick.
- (iii) Headache.
- (iv) Yellowing of eyes and skin.
- (v) Tiredness
- (vi) depression.
- (vii) sense of feeling unwell.

Causal Agent of Hepatitis:

(1) Viruses

- Hepatitis A Virus — Hepatitis A.
- Hepatitis B Virus — Hepatitis B.
- Hepatitis C Virus — Hepatitis C.
- Hepatitis D Virus — Hepatitis D.
- Hepatitis E Virus — Hepatitis E.

(2) Alcohol

(3) Toxins.

(4) Autoimmune diseases.

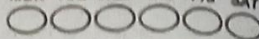
General Causes:

- (1) Drugs and medication.
- (2) Acetaminophen (paracetamol) overdose.
- (3) Chemotherapy drugs.
- (4) Mushroom poisoning.
- (5) Genetic disorder.
- (6) Fatty liver disease.
- (7) Viral hemorrhagic fevers.

Treatment:

- (1) Hepatitis A: Rest, hydration, hospitalization (severe case)
- (2) Hepatitis B: Medication for chronic cases.

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- (2) Hepatitis C: Antiviral medication.
- (4) Hepatitis D and E: Rest, hydration, and nutrition.
- (5) Autoimmune Hepatitis: Corticosteroids and immune-suppressing drugs.

Preventive Measures:

- (1) Vaccination.
- (2) Practice good hygiene.
- (3) Avoid close contact ^{with} who have hepatitis.
- (4) Avoid sharing needles/syringes.
- (5) Avoid contaminated food and water.
- (6) Avoid Alcohol.

(5) Polio

Definition:

“Polio is a highly contagious infectious disease caused by poliovirus.”

Symptoms:

- (1) Fever
- (2) Headache.
- (3) Sore throat.
- (4) Fatigue

- (5) Nausea and vomiting.
- (6) Pain in arms and muscles. (^{cause} Paralysis)
- (7) Abdominal pain.
- (8) Muscle pain and weakness.

Causal Agent :

- (1) Poliovirus belongs to enterovirus family.
- (2) Virus has three serotypes.

General Causes:

- (1) Poliovirus infection.
- (2) Poor hygiene.
- (3) Contaminated food and water
- (4) low immunity
- (5) Poor vaccination coverage
- (6) Migration from affected areas.

Treatment :

Treatment of polio include

- (1) Physical therapy.
- (2) Pain management
- (3) Speech therapy.
- (4) Nutritional support.

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- (5) Rehabilitation.
- (6) Surgery.
- (7) Psychological support.

Vaccines:

- Inactivated Polio Vaccine (IPV)
- Oral polio vaccine (OPV)

Preventive measures:

- (1) Get vaccination.
- (2) Good Hygiene.
- (3) Drink safe water.
- (4) Proper disposal.
- (5) Avoid close contact with person who has polio.
- (6) Improve sanitation.
- (7) Community awareness.
- (8) Travel precautions.

Good structure and presentation