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TOPIC: VIRAL HEPATITIS: A RAVAGING DISEASE
THAT NEEDS ATTENTION

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VIRAL HEPATITIS: A RAVAGING DISEASE THAT NEEDS ATTENTION
This work is dedicated to our Lord Christ and to the blessed Virgin Mary, Mother of Jesus the Saviour.
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ABSTRACT

Viral hepatitis is a disease that has been plaguing the world at large by its complication, mortality and morbidity patterns.

The topic viral hepatitis as a ravaging disease that needs attention was chosen to create awareness to the public on the types of viral hepatitis, how it can be prevented, controlled and managed.
INTRODUCTION

Ogeneh (2002) in medical microbiology defined virus as an ultramicroscopic non-cellular entity which consists of protein and nucleic acid (DNA OR RNA) and which can replicate only after entry into specific types of living cells. Viruses have no intrinsic metabolism, their replication being dependent on the direction of cellular metabolism by the viral genome. Within the host cell viral components are synthesized separately and are assembled intercellular, to or mature infectious viruses. (virions viruses infect plant, animal, man, bacteria, fungi and algae. The infection of the organism by viruses may or may not give rise to symptoms of diseases depending upon the types of virus involved.

Diseases of viral etiology include chicken pox, herpaagia, influenza, polioeryelitis, rabies, measles, small pox, yellow fever, laser fever, HIV AIDS, hepatitis among others.
Hepatitis as defined by Diana (1999) is the inflammation of the liver. It is caused by infectious with various organism such as bacteria, viruses, chemical-toxin such as alcohol, drugs, poisonous mushroom. In addition immune cell in the body may attack the liver and cause auto immune hepatitis.

Brunner and suddarth (1995) use the term viral hepatitis to describe infections of the liver caused by a group of viruses having a particular affinity for the liver. Park (2000) classified viral hepatitis into six. They are hepatitis A, B, C, D, E and G. Hepatitis due to all these viruses present clinically in a very similar fashion especially during the acute phase of the illness. Thus a specific diagnosis can only be made in the laboratory.

Viral hepatitis should be treated seriously as it is an infectious diseases which can be easily transmitted and one which can in some cases lead to a serious liver complication. Approximately 10% of people infected with viral hepatitis especially hepatitis B develop a chronic life long infection.
Zobair and Younossi (1999) stated that each year thousands of people of all ages infected with B and about 5, 000 die of chronic liver problem caused by hepatitis B infection. World statistics show that almost 2.2 billion people nearly half the world population are infected by viral hepatitis (WHO 2003).

World health reported that hepatitis B has infected 2,000 million people alive today, of whom 350 million are chronically infected and therefore at risk of death from liver diseases. And about 100 million are chronically and incurable infected with Hepatitis C and are similarly at risk.

The exact incidence of hepatitis A is difficult to estimate because of the high asymptomatic cases. However according to WHO (2003) about 10-50 persons per 100,000 are affected annually but mostly in developing countries in the report no statistics were given for hepatitis E, D, and G. Hepatitis E virus has know to be problem of the developing countries. In fact viral hepatitis is said to be more in developing countries than
developed due to major preventive problem that persist in developing countries.

However, the risk of becoming infected by viral hepatitis can greatly be reduced by understanding how it is transmitted. The risk of chronic hepatitis B is much greater if the disease is acquired in childhood as common in Africa and China (Zobair and Younossi 1999).

Although much is now known about the transmission and prevention of viral hepatitis, there is still more to be discovered.

Medical and paramedical practitioners are conducting research to improve antiviral treatment of chronic hepatitis, understand better the relationship between liver cancer and chronic viral hepatitis, advance in vaccination programmes against hepatitis Band C. Because of the chronicity of the disease and last of life of about 8000-1000 people each year has caused harm in human population which lead to reduction in productivity. (Park 2000).
OBJECTIVE

At the end of the seminar, the audience should be able to:

Enumerate types of viral hepatitis and how they can be transmitted.

Discuss the management of viral hepatitis.

Learn the prevention and control viral hepatitis.

Learn why hepatitis is regarded as a ravaging diseases that needs attention.
TYPES OF VIRAL HEPATITIS

According to Brunner and Suddarth (1995) the term viral hepatitis is used to describe the infection of the liver by a little group of organisms called viruses. The common clinical features are anorexia, nausea, vomiting, right upper quadrant pain, jaundice, low grade fever, coloured stool and abdominal distention.

Six hepatitis viruses have been identified and they are hepatitis A, B, C, D, E, G (Park 2000) Hepatitis A and E are enterically transmitted while B, C, D, and G are parenterally transmitted (Ramazi, et al. 1999).

HEPATITIS A VIRUS (HAV)

Hepatitis A is known as an infectious hepatitis and scourge of military campaigns since antiquity, is a benign self limited disease. It occurs sporadically (Ramazi, et al. 1999).
MODE OF TRANSMISSION

It is enterically transmitted mainly by faecal-oral. Hepatitis A virus is spread by ingestion of contaminated water, food, milk, fruits, etc. It may occur: direct (person to person or indirectly by way of contaminated water. Water borne transmission is not a major factor in developed countries. While food borne outbreak are more.

Sexually transmitted: As a sexually transmitted infection A may occur mainly among homosexual men because of oral-anal contact (Park 2000).

CLINICAL FEATURES

The disease is heralded by non specific symptoms such as fever, chills, head fatigue, generalized weakness, aches and pains followed by anorexia, nausea, vomiting, dark urine and jaundice.

INCUBATION PERIOD

Incubation period varies from 15 to 40 days with an average of 20 days i.e. 2-6 weeks.
EPIDEMIOLOGY

The disease is widespread but it is more common in the tropics and subtropics, it is mild and asymptomatic infection. It is very common especially in children.

DIAGNOSIS

Hepatitis A virus ranges from 25-27 nm in diameter and is identified by immune electron microscopy.

Serologic test:- Specific antibody against hepatitis A virus of the immune globulin (Ig) m type appears in blood at the one set of symptom, constituting a reliable marker of acute infection (Ramazi et al 1999).

HEPATITIS B VIRUS (HBV)

Hepatitis B (formally known as “serum” hepatitis). It can produce:

1. Acute hepatitis
2. Non-progressive chronic hepatitis
3. Progressive chronic hepatitis ending in cirrhosis.
4. Fulminant hepatitis with massive liver necrosis
5. An asymptomatic carrier state

6. A back drop for D hepatitis

Hepatitis B virus plays an important role in the development of heptocellular carcinoma. It was discovered by Blumberg 1963.

**MODE OF TRANSMISSION**

Hepatitis B is parenterally transmitted through blood, i.e blood transfusion, serum products, sharing of needles, razors, tattooing, acupuncture, renal dialysis, organ donation and sexual intercourse.

Horizontal transmission in children the researcher believe that the spread occur through physical contact between children with skin conditions such as impetigo, scabies or with cut or grazes.

Vertical Transmission:- Prenatal transmission from a carrier mother to her baby. (Park 2000)

**CLINICAL FEATURES**

It includes weakness of the body pains at right upper quadrant and jaundice.
INCUBATION PERIOD

Incubation period of 2-5 months and has insidious onset of symptoms. Lower doses of virus result often in longer incubation period.

EPIDEMIOLOGY

Liver disease due to hepatitis B virus is an enormous problem globally with an estimated worldwide carrier 450 million persistent carrier of hepatitis B. In USA, there are 300,000 new infection per year, 50 million in Africa carriage rate vary markedly in different areas. In South Africa, infection is much more common in rural communities.
DIAGNOSIS
Hepatitis B virus (HBV) possesses at least three separate antigens surface antigen (HbsAg) core antigen (HbcAg) and enzyme antigen (HbeAg).
The HbeAg is a valuable marker of potential infectivity of HbsAg positive serum.

HEPATITIS C VIRUS (HCV)
Hepatitis C is the major cause of parenterally transmitted non A and B hepatitis and was identified in 1989. It is the most common form of chronic liver disease in USA. And is closely related to hepatitis G virus, occupy a genus in the flavivirus.

MODE OF TRANSMISSION
It can be transmitted through blood transfusion, blood product, intravenous drug abusers, organ donation.

CLINICAL FEATURES
It has a mild form of clinical symptom in form of acute hepatitis but develop chronic infection following exposure.
(Park 2000)
EPIDEMIOLOGY
The incidence is endemic worldwide with high incidence in Japan, Italy, and Spain. In South Africa, 1% of blood donors have antibodies.

DIAGNOSIS
Hepatitis C virus RNA is detectable in blood for 1 to 3 weeks. With elevations in serum transaminases specific IgG indicates exposure. PCR detects viral genome in patient serum.

HEPATITIS D VIRUS (HDV)
This is also called delta hepatitis. It affects mainly people with hepatitis B. Hepatitis is a unique RNA virus that is replication defective, causing infection only when it is encapsulated by HBsAg.

MODE OF TRANSMISSION
Hepatitis D is parenterally transmitted through blood and blood products.

CLINICAL FEATURES
Same as Hepatitis B
INCUBATION PERIOD

Incubation period is 4 – 7 weeks. Increases severity of liver disease in hepatitis B carriers.

EPIDEMIOLOGY

Infection by delta agent is worldwide but the prevalence varies greatly. In Africa, Middle East and Southern Italy 20% to 40% of HbsAg carriers have anti-hepatitis D virus. In USA hepatitis D virus infection is uncommon and largely restricted to drug addicts and hemophiliacs.

DIAGNOSIS

Hepatitis D virus is a 35nm double -shelled particle that by electron microscopy resembles the Dane particles of hepatitis B virus.

Serologic test:- Hepatitis D virus RNA is detectable in the blood and liver just before and in the early days of acute asymptomatic diseases.
HEPATITIS E VIRUS (HEV)

Hepatitis E is an enterically transmitted water-borne infection occurring primarily in young to middle age adults. It was discovered 1990. Sporadic infection and overt illness in children are rare.

MODE OF TRANSMISSION

It is spread through contaminated food and water. Enterically transmitted

CLINICAL FEATURE

Vomiting, nausea, jaundice, pains etc.

INCUBATION PERIOD

It has an average incubation period of 2 – 8 weeks.

EPIDEMIOLOGY OF HEPATITIS E VIRUS (HEV)

The first major epidemic was reported in New Delhi in the winter of 1955 – 1956. After the flooding of Yamuna river, 30,000 cases of jaundice were described. China reported 100,000 cases of jaundice between 1986 to 1988. Since then additional outbreaks have reported from Borneo, India,
Mexico, Nepal Pakistan etc. Hepatitis E outbreak is rare in temperature climate like in central Europe and North America (Park 2000)

**DIAGNOSIS**

Calicivirus- Like particle will be seen in the stool by electron microscopy. Before onset of clinical illness, hepatitis E virus RNA and hepatitis E virus virions can be detected in the stool and liver.

**HEPATITIS G VIRUS (HGV)**

Hepatitis G virus is a new hepatitis discovered 1996. It appears to be non pathogenic causing neither liver diseases nor exacerbation of liver disease.

**MODE OF TRANSMISSION**

It is parenterally transmitted. It can be transmitted through blood transfusion, blood products, intravenous drug abuser.

**CLINICAL FEATURES**

It had the same similarities with hepatitis C.
INCUBATION PERIOD
incubation period is unknown

EPIDEMIOLOGY
A viral agent bearing similarities to hepatitis C virus has been done and designated hepatitis G virus (HGV). Evidence of hepatitis G virus exposure has been found in 1% to 2% of blood donors in United States.

DIAGNOSIS
Hepatitis G virus RNA is detectable in blood.

MANAGEMENT/TREATMENT OF VIRAL HEPATITIS
Viral hepatitis has no definitive treatment but it is treated symptomatically that is according to the symptom it presents. Even in the mild cases, the patient should be put to bed, because bed rest lessens the damage to the liver and hasten convalescence.

Diet: The diet must be light. Fats are usually not tolerated and so should be omitted. Glucose provides adequate calories and
places no strain on the liver and is very important when nausea and vomiting are present. High calories diet is tolerated, vitamins and minerals are given in high quantities, copious fluid intake is advocated to flush out toxin in the liver.

Drug: Drugs of different group, with different action, are given according to doctor's prescription such as Reducyan to regenerate the liver, when jaundice is deep and slow to improve, a course of cortisone or prednisone will hasten recovery. A proportion of patients will respond well to anti viral drug treatment like interferon. Physiological care: Is very necessary. (Waston 1999).

PREVENTION AND CONTROL OF VIRAL HEPATITIS

For hepatitis A and E which are enterically transmitted, the prevention are as follows.

Avoid contaminated food and water, thorough hand washing after using the toilet and avoid contact with infected person's blood, feces or any bodily fluid. (Lucas & Gilles 1990)
Immune globulin should be given to all close contact of people with Hepatitis A. A new hepatitis A vaccine called Hervix was licensed and recommended for people who travel frequently or have long overseas stays.

The vaccine is administered in two doses and the second is received 6 to 12 months after the first.

For hepatitis B, C, D, and G which are parenterally transmitted the prevention will be done in the following ways.

- Screening of all donated blood will reduced the likelihood of contracting the disease from blood transfusion.
- Get vaccinated — Hepatitis B vaccine is safe, effective and gives best protection.
- Practice safe sex — If you are having sex and not with a steady partner, then use condom to reduce transmission.

Avoid using "used razor" and tooth brush. Do not share needle with anyone, be caution when getting tattoos and body piercing. All health workers, should practice all safety precautions when handling blood and bodily fluids.
Currently there is no vaccine for hepatitis C and G (Diana 1999). In the control measures, all suspected or identified cases should be isolated or barrier nursed to avoid spreading it to other.

**WHY VIRAL HEPATITIS IS REGARDED AS RAVAGING DISEASE THAT NEEDS ATTENTION.**

1. The persistent nature of the disease making it more difficult to be cured.
2. Viral hepatitis can affect other parts of the body.
3. Psychological/emotional trauma
4. Economic impairment.

According to the division of viral hepatitis centre for disease control and prevention, National centre for infectious diseases USA. Viral hepatitis becomes persistent, and chronic infection in the following ways.

**PERSISTENT INFECTION:** - Following acute infection approximately 5% of infected individuals fail to eliminate the
virus completely and become persistently infected. The virus persists in the hepatocytes and on-going liver damage occurs because of the lost immune response against the infected liver cells. Chronic infection may take one of the two forms.

a. Chronic persistent hepatitis: - The virus persists, but there is minimal liver damage.

b. Chronic active hepatitis: - There is aggressive destruction of liver tissue and rapid progression to cirrhosis or liver failure. According to Everson (1998) cirrhosis of the liver can lead to further serious complication such as accumulation of fluid in the body or bleeding from veins in the gullet known as Oesophageal varices.

Patients who become persistently infected are at risk of developing hepatocellular carcinoma (HCC). Hepatitis B virus is thought to play a role in the development of this malignancy because 80% of patients with HCC are carriers of hepatitis B. Viral DNA can be identified in hepatocellular cancer cells and it can integrate into host chromosomes.
Viral hepatitis can adversely affect other systems in the body thereby impairing their functions.

According to Phillip, et al. (1995). One of the functions of the liver is protein synthesis inform of deamination of amino acid, formation of urea for removal of ammonia from the body.

Failure of the liver to do this work, brings about ammonia intoxication (Mc Canse & Hyejhe 1998). The ammonia intoxication is as a result of the adverse reaction of ammonia which is formed as a product of amino acid and nucleic acid catabolism.

In viral hepatitis, ammonia accumulates in blood resulting in neurological damage. The increase in level of ammonia in the blood causes a severe toxic state called hepaticencephalopathy or hepatic coma. This condition can lead to

- Variable consciousness (lethargy) stupor coma.
- Tremors of the hand, personality changes, memory loss.
- Hyper reflexia (an increase in reflex reaction.)
- Hyperventilation (cause by respiratory alkalosis of high ammonia levels stimulating the respiratory center).

The reason behind hepatic encephalopathy is that normally, the liver converts ammonia into glutamine which stored in the liver and later converted to urea and excreted through the kidney. Blood ammonia rises when liver cells are unable to perform this conversion. After blood ammonia rises, may unusual compound e.g. octopamine) are formed. These apparently act as false neurotransmitter in the central nervous system. Ammonia is also CNS toxin with glial and nerve cell affected leading to altered CNS metabolism and function.

**PSYCHOLOGICAL/EMOTIONAL TRAUMA**

Lucas and Gilles (1990) stated that patient who are hospitalized as a result of viral hepatitis infection are usually nursed under special condition because of the infectious nature of the disease. The patients are barrier nursed.
Carrier infection. Because of this patient is being isolated from others, they feel psychologically wounded for having infectious disease.

Also because of the terminal disease that chronic viral hepatitis could lead to as it was stated by them. “Hepatitis gives rise to one of the ten most common cancer, hepatocellular carcinoma” patient with viral hepatitis are always afraid thinking that it could lead to cancer. All these affect the psychological state of the individual. Furthermore, this patient that is being hospitalized is on bed rest, to help the liver recover. The role the patient plays in the family will be altered and modified, leading to another member of the family taking up the patient’s role to continue the family activities in the absence of the patient thus called role modification.

Economic impairment

According to Younossi (1999) investigators are increasingly eager to integrate the traditional biomedical model of health with those of the social science model of health. In this
integrated approach, it is not only important to measure the traditional physiologic outcomes but also the economic and quality of life.

Chronic viral hepatitis with its impact on mortality, morbidity and resources utilization has been the target of this integrated approach. In the last decade we have witnessed a number of studies addressing health-related quality of life issue and economic analysis for patients with chronic viral hepatitis. For instance there was an outbreak of hepatitis A in Michigan with about 264 cases were hospitalized. He estimated that public cost of the outbreak and to state and local agencies in Michigan was nearly $475,000 in person per hour and other resources including $110,895 for immune globulin.
RECOMMENDATION

Furthermore, since all these tragedies could be avoided through prevention the following suggestions are made.

Health Education: The public should be health educated on basic hygienic i.e. both personal and environmental hygiene such as clearing of the surrounding, hand washing practice before eating anything. Washing of fruits before eating. They should know the implication of coming in contact with blood products and bodily fluid.

Sex education: - The importance of practicing safe sex behaviour.

Immunization: Every person should be immunized against hepatitis B virus and other viral hepatitis. Government should made it mandatory, that people at high risk are immunized example institutional workers, health care professionals, food handlers etc.
Also the government should state a law that anybody coming into the country newly should present a certificate that shows that he or she has received viral hepatitis immunization. The implication of using unsterilized instrument should be made known to hospitals.
CONCLUSION AND SUMMARY

This paper discussed viral hepatitis as a ravaging disease that needs special attention. From the foregoing one could deduce that this disease is dangerous considering the complications which include chronic hepatitis, liver cirrhosis and finally death.
REFERENCES


