

INCIDENCE AND PREVALENCE OF HEPATITIS A AND B IN THE REGION OF GOSTIVAR FOR THE PERIOD 2010-2015

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Abstract

Definition: Viral hepatitis are systemic infections affecting mainly the liver and causing inflammatory injury, histologically characterized by parenchymal necrosis and inflammatory infiltrations.

Objective: To analyse the total number of patients infected with Hepatitis A and B categorized by gender and age during the time period 2010 – 2015 at the General Hospital of Gostivar.

Materials and methods: The patients' documentation registered at the General Hospital in Gostivar for the period of 2010 – 2015 is analysed.

Results: Hepatitis A is more often present in males (59% of the cases), than it is in females (41% of the cases). Hepatitis B is also more often present in males and it is present in 71% of cases, and in females it is present in 29% of the cases.

Conclusion: Hepatitis A is a disease which attacks persons of age groups 20-24, and 15-19. Hepatitis B attacks persons of age groups 35-44, and 25-34 years old.

Register of acronyms: HAV (Hepatitis A Virus); HBV (Hepatitis B Virus)

Keywords: Hepatitis A, Hepatitis B

INTRODUCTION

Viral hepatitis are systemic infections which affect mainly the liver, causing inflammatory injury, histologically characterized by parenchymal necrosis and inflammatory infiltrates.

Discovered true viruses that cause injury to hepatocytes include: Hepatitis A Virus, Hepatitis B Virus, Hepatitis C virus, Hepatitis D Virus, Hepatitis E Virus, and perhaps Hepatitis G. There are only hypotheses established concerning the existence of other viruses such as Virus F. Cytomegaloviruses, Herpes Simplex Virus, Varicella Virus, Herpes Zoster Virus, Cocksackievirus Virus, Yellow Fever Virus, and Epstein-Barr virus, etc. are called viral hepatitis and cause histological alterations in the liver.

Hepatitis A

Hepatitis A, is an acute self-limiting inflammation of the liver, with good prognosis, which almost never develops into chronic form. This disease is caused by Hepatitis A Virus, which is an RNA Virus.

Hepatitis A Virus based on the physical-chemical characteristics and on the morphological appearance, is classified in the family of Picornaviridae, genus Hepatovirus. The virus may be isolated from faeces, gallbladder, and infected liver. It has spherical form, and it is non-enveloped, with dimensions of 27-28 millimeters. The viral particles may have a fully developed structure, but it may also have a partly developed structure. Hepatitis A Virus is present in the liver, the bile, faeces, and in a very short period of time it reaches the blood during the last phase of the incubation period. This type of virus stimulates the production of

two types of antibodies: at the beginning of the symptomatology there is a specific antibody response, mainly of type IgM, and during the convalescence period IgG antibodies are predominant. The values of IgM antibodies titers remain high for a couple of months after an acute episode, whereas the IgG antibodies appear later, but persist for a longer time, perhaps for lifetime. The presence of IgG anti-HVA antibodies is a marker for a past infection of hepatitis A, and for immunity towards HAV.

The only known source of infection for Hepatitis A is the human person, who spreads the virus by eliminating faeces in the environment. There are no chronic ports for this disease, but the virus is eliminated only by the infected host and with obvious presentation of infection or in milder forms which may be asymptomatic. The elimination of the virus from these infected hosts is completed in a short period of time.

Hepatitis A is world wide spread, and the disease may manifest in sporadic and in epidemic forms. The spread of disease is facilitated by un-hygienic and un-sanitary living conditions, thus the infection and the disease spread widely in regions with low socio-economic conditions. The Hepatitis A pathogenesis is not yet fully understood.

Symptoms:

The signs and symptoms of Hepatitis A appear several weeks after the viral infection, and they include:

- Fatigue
- Nausea and vomiting
- Stomach pain and discomfort, especially in the hepatic region, the right side under the lowest-most rib
- Dark coloured urine
- Jaundice
- Hypothermia
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Treatment:

A specific treatment, for acute viral hepatitis, does not yet exist; we base the treatment, however, mainly upon resting and dietetic regiments. A long, bedridden rest is not necessary.

Prevention:

Prevention is best conducted by respecting the normal hygiene-sanitary measures for prevention of the faecal-oral diseases. Passive-immune prophylaxis is recommended, for protection after contact with an infected person. During the first two weeks of contact, a doze of 0.02 ml per kilogram of body mass is administered. This immune defense is effective for 3-6 months.

Hepatitis B

Hepatitis B is the most common hepatitis and it infects persons of every age.

Hepatitis B has also been named Serum Hepatitis because it had been noticed that the diseased developed in persons receiving blood transfusion or its products, or due to the usage of contaminated syringes. This name was used to distinguish this type of hepatitis from the so-named “epidemic” hepatitis (Hepatitis A).

Aetiology of Hepatitis B disease is Hepatitis B Virus.

Hepatitis B Virus belongs to the Hepadnaviridae. It is a hepatotropic virus containing double DNA. In the serum of a Hepatitis B infected person three forms of the viral particle have been identified: spherical, cylindrical and Dane.

The spherical and cylindrical forms are predominant, but they are not infective. The Dane particles, however, are the infective form of viral particles.

Serologic markers of an HBV infection appear several weeks after infection, and much sooner than the appearance of the acute hepatitis' clinical signs.

The first marker to appear in the serum is the surface antigen of Hepatitis B Virus – HbsAg and its presence in serum is a marker of the infection, and a marker for follow-up of the antiviral treatment during the chronic hepatitides.

Even though the Hepatitis B pathogenesis is not discovered completely, it is a general opinion that the hepatocytes' changes happening during the acute and chronic disease, are a consequence of the immune response of the host organism towards the infection. The disease is spread parenterally, by blood and its products, unprotected sexual intercourse, vertical transmission (mother-to-child), etc.

Symptoms:

- Dark coloured urine
- Fever
- Loss of appetite
- Nausea and vomiting
- Fatigue
- Weakness
- Jaundice

Treatment:

The treatment for Hepatitis B is symptomatic and hygiene-dietetic in composition with bed-ridden regime.

The drugs which may be used in the treatment of Hepatitis B are: Alpha Interferon, and Lamivudine.

Prevention:

Best prevention of the disease is by active vaccination with three vaccine doses produced by genetic engineering. The vaccination begins after birth and is legally obliging.

The purpose of the scientific work

The purpose of this scientific work consists in the analysis of the total number of patients infected with Hepatitis A and B:

- To show the types of hepatitis
- To show the number of infected individuals classified upon gender
- To show the number of infected individuals classified upon age group
- To show graphical and tabular analysis all of these data acquired from the General Hospital in Gostivar, for the region of Gostivar and its surroundings area.

Material and methods

The data for totally 39 Hepatitis A patients and 13 Hepatitis B patients, in various age groups, at the General Hospital in Gostivar, has been analysed.

Graphical and tabular presentation

Detection of Hepatitis A and B is achieved by utilization of Abot, Murex, Humana devices, and by utilizing the method ELISA by different approaches:

- Rapid course
- PCR method
- NAT – nuclear
- Ryad

RESULTS

The data for totally 39 Hepatitis A patients and 13 Hepatitis B patients has been analysed.

Table 1. Number of patients with Hepatitis A, based on Group Age, at the General Hospital in Gostivar, for the time period 2010-2015

	<1 YO	1-4 YO	5-9 YO	10-14 YO	15-19 YO	20-24 YO	25-34 YO	35-44 YO	45-54 YO	55-64 YO	> 65 YO	Total (Σ):	
M	0	2	2	2	2	10	3	1	1	0	0	M	F
F	1	0	0	3	5	2	1	3	1	0	0	23	16
Σ	1	2	2	5	7	12	4	4	2	0	0	39	

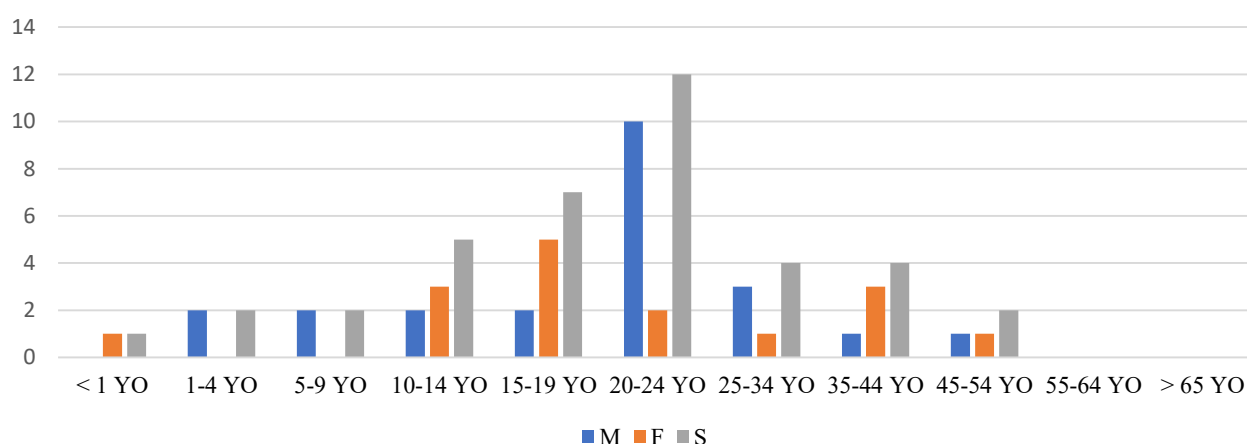


Figure 1. Number of patients infected with Hepatitis A, filtered by Group Age

Comment: From Table 1 and Figure 1 it may be observed that most of the patients infected of Hepatitis A are of the Group Age of 20-24 years old, of which 10 are males and 2 females.

Table 2. Number of patients with Hepatitis B, based on Group Age, at the General Hospital in Gostivar, for the time period 2010-2015

	<1 YO	1-4 YO	5-9 YO	10-14 YO	15-19 YO	20-24 YO	25-34 YO	35-44 YO	45-54 YO	55-64 YO	> 65 YO	Total (Σ):	
M	0	0	0	0	0	2	2	2	1	1	0	M	F
F	0	1	0	0	0	0	1	2	0	0	1	8	5
Σ	0	1	0	0	0	2	3	4	1	1	1	13	

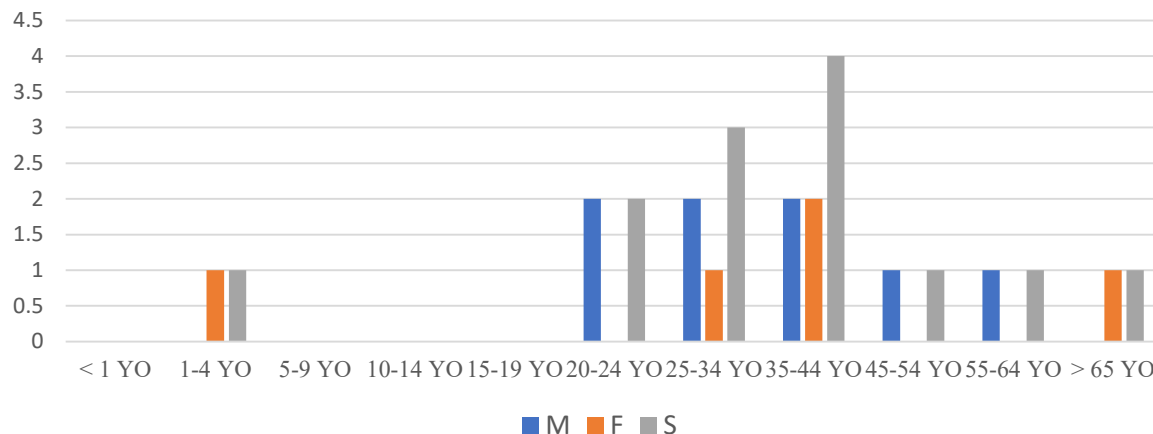


Figure 2. Number of patients infected with Hepatitis **B**, filtered by Group Age

Comment: From Table 2 and Chart 2 it may be observed that the age group which is affected by Hepatitis B is that of 35-44 years old, with 2 of the patients being males and the 2 are females.

Table 3. Total number of patients infected with Hepatitis A, classified based on sex, from data obtained from the General Hospital in Gostivar, for the time period of 2010 – 2015

Male	Female	Total (Σ):
23	16	39

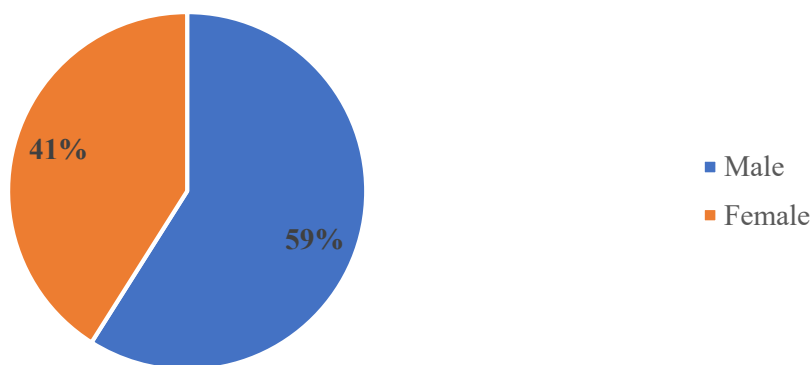


Figure 3. Percentage of patients infected with Hepatitis A, grouped by sex, with data obtained from the General Hospital of Gostivar, for the period of 2010 – 2015

Comment: Table 3 shows that of the total number of patients (39) infected with Hepatitis A, 23 are males and the rest 16 are females. Whereas, from chart 3 it may be observed that 59 % of the infected persons are males and the rest (41 %) are females.

Table 4. Total number of patients infected with Hepatitis B, classified based on sex, from data obtained from the General Hospital in Gostivar, for the time period of 2010 – 2015.

Male	Female	Total (Σ):
8	5	13

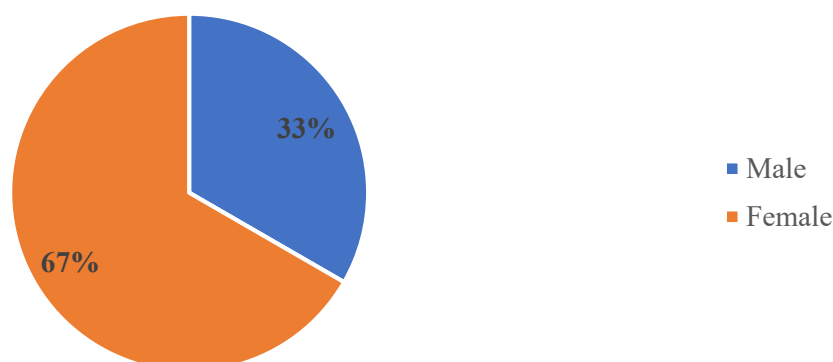


Figure 4. Percentage of patients infected with Hepatitis B, grouped by sex, with data obtained from the General Hospital of Gostivar, for the period of 2010 – 2015

Comment: From Table 4 it may be observed that of the total number of patients (13) infected with Hepatitis B, 8 patients are males and the rest 5 are females. Whereas, from Chart 4 it can be observed that 71% of patients with Hepatitis B, are males, and 29 % are females.

CONCLUSION

Based on the obtained results, we can conclude that:

1. Hepatitis A is the most frequent type of hepatitis, and affects predominantly males, 59 % of the cases.
2. More often, it appears in patients of age groups of 20-24 years old.

Conditions facilitating Hepatitis A infection are poor living hygiene-sanitary conditions, while etiologic factor for Hepatitis B infections are utilization of infected syringes, unprotected sexual practices, etc.

In this scientific paper, 39 Hepatitis A patients, and 13 Hepatitis B patients are analysed, who were evidenced in the Hepatitis Patients list of the General Hospital in Gostivar during the time period of 2010-2015.

Of the 39 Hepatitis A patients, 23 (59 %) are males, and 16 (41 %) patients are females, whereas of the total 13 Hepatitis B patients, 8 (71 %) are male patients, and 5 (29 %) are female.

Concerning the group age, the most vulnerable group age to Hepatitis A is group of 20-24 years old, of which 10 patients are males, and 2 patients are females.

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