PECULIARITIES OF HEPATITIS A VIRAL INFECTION IN BIHOR COUNTY

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Abstract

Acute HAV infection is clinically indistinguishable from other causes of acute viral hepatitis. In young children the disease is often asymptomatic, whereas in older children and adults there may be a range of clinical manifestations from mild, anicteric infection to fulminant hepatic failure. Clinical variants include prolonged, relapsing, and cholestatic forms.

In Bihor county the prolonged forms of HAV are mainly affecting the adult population (67.24%) and are more frequent in females (72.41%), in rural areas, especially surrounding the river Crişul Repede. The appearance of HAV is more frequent in spring and autumn.

Clinical forms are dominated by medium forms (47.02%), followed by mild forms (37.12%). 11.13% of patients presented simple prolonged forms, representing 77.58% of total prolonged forms, 13 of the cases (3.2%) had undulant forms, representing 22.42% of total prolonged forms.

Management of the acute illness is supportive, and complete recovery without sequelae is the usual outcome. More recently, active immunoprophylaxis by vaccination has been accomplished.

Key words: HAV infection, asymptomatic, prolonged forms, vaccination.

INTRODUCTION

Most cases of HAV are asymptomatic, with the frequency of anicteric cases approaching 80%. Even the HAV infection globally is asymptomatic and subclinical, approximately 75% of adults are symptomatic, many with jaundice. In stark contrast, 90% of those infected before age 5 years are asymptomatic. The single most important determinant of illness severity is age; a direct correlation between increasing age and likelihood of adverse events (lethality, morbidity and mortality) is present. The prolonged forms are founded in aged people, in the presence of associated pathology and in cases with immuno-depression. Consequently, the vaccination in endemic regions is necessary and useful.

OBJECTIVES

1. Investigation of the prolonged clinical forms of acute viral hepatitis A (HAV) in the period 01.01.2007–31.12.2007 in Bihor county, compared with the incidence of medium forms and assessment of epidemic extent.
2. Study of patients suffering from prolonged forms of hepatitis A according to personal characteristics (age, sex, location, occupation).
3. Evaluation and assessment of temporal and geographic distribution.
4. Verification of diagnosis by review of accumulated clinical and laboratory data.
5. Associated pathology and complications.

MATERIAL AND METHODS

A number of 404 cases of HAV were admitted in the Clinical Department of Infectious Diseases Oradea during the year 2007. We made a quantification of population affected by prolonged forms of HAV in Bihor county during the period 01.01.2007–31.12.2007 according to age, sex, rural area, urban area. Statistic analysis of reported incidence within the population of Bihor county was established (623,000 inhabitants).
Epidemic investigations were performed by surveys, identifying circumstances leading to occurrences of affections, focal family existence, onset of diseases, establishing the correct time for incubation period, selecting and registering contacts and emphasizing the elements of contaminated media and occupational place data.
We studied the biological parameters (hemogram, bilirubin, Tymol test, hepatocytolytic enzymes, urea, creatinine, glycaemia); we made close observations of valid cases on the basis of personal data, epidemic results, anamnesis, clinical and laboratory results. Each patient has undergone serologic examination in order to establish the etiologic diagnosis (IgM–HAV).
Anamnesis was taken into account by each participant, completing a detailed questionnaire and studying the onset of signs and symptoms. Clinical examination disclosed evidence of hepato-splenomegaly, modification of urine and stools colour.
Classification of prolonged forms of HAV was made by the following criteria:

- Hospitalization for more than 21 days
- Readmission after 14 days of discharge from hospital
- Hospitalization for more than 14 days with evidence of over 1mg bilirubin values or five times more than normal transaminases values.

Based on these criteria, prolonged forms of HAV were classified into: simple (with a single period of hospitalization) and undulant (with repeated hospitalization or readmission).
Clinical studies of HAV prolonged forms have been analyzed by: duration of hospitalization, number of simple forms or undulant forms and number of cases corresponding to prolonged forms associated with other diseases.
We performed a study of incidence of the prolonged forms of HAV correlated with location, human algorithm and existence of any rivers or water bodies.

RESULTS AND DISCUSSION

There were identified 58 cases with HAV prolonged forms into the total number of 404 cases of acute HAV during the year 2007. Incidence rate of prolonged forms was 14.35% out of the total cases of HAV. Incidence of HAV in the population of Bihor county was 63.62/100,000 inhabitants. The prolonged forms appeared in 58 persons, representing an incidence of 9.13//100,000 inhabitants.
Prevalence of HAV prolonged forms was higher in adults (39 cases – 67.24%), especially due to the associated pathology. Out of the total cases of HAV prolonged forms, the majority were females (42 cases – 72.41%), the number of males was lower (16 cases – 27.59%).
The patients coming from rural areas represented the majority (32 cases – 55.17%). The repartition of cases shows the predominance of HAV prolonged forms in the area of Crişul Repede river and urban area. Total number of HAV prolonged forms in the city of Oradea was 26, representing 44.82%, and in Crişul Repede area there were 12 cases, representing 20.68% of total.
Evolution of HAV prolonged forms was influenced by various factors like age, sex, associated diseases, water, sunlight, and heat.

Out of the total of 404 HAV cases, 150 (37.12%) manifested as mild forms, 190 (47.02%) as medium forms, 58 cases (14.35%) evolved in prolonged forms, 45 cases (11.13%) presented simple prolonged forms, representing 77.58% of total prolonged forms, 13 of these cases (3.2%) had undulant forms, representing 22.42% of total prolonged forms. Six cases (1.48%) had severe evolutions, with liver failure.
Undulant forms were dominant in adults as compared to children, mild forms of HAV in adults presented approximately equal proportion in each sex, representing 50.4% in males and 49.6% in females. Though, in simple prolonged forms, females had the higher rate of incidence (36 cases of females – 80% and 9 cases of males – 20%). In simple prolonged forms the majority of cases were children (60%) while the adults represented only 40%.

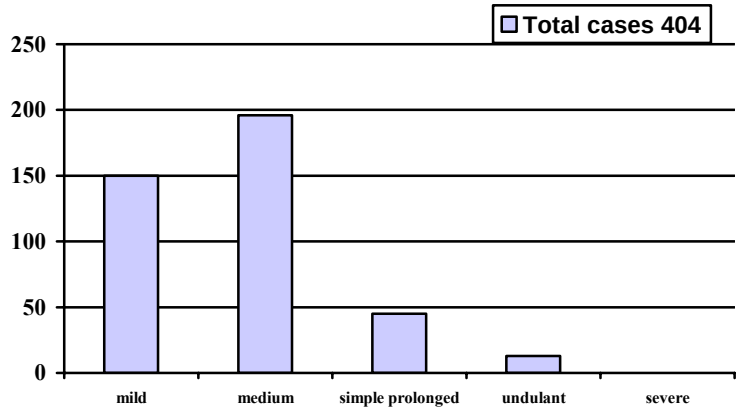

Fig. 1 – Clinical forms of prolonged HAV cases

The duration of icteric forms varies from 4 to 52 days, averaging 28 days and the duration of hospitalization varies from 14 to 56 days, averaging 35 days. Among prolonged HAV cases, icteric forms were predominantly severe, representing 46 cases (79.31%) and moderate forms occurred in 12 cases (20.79%).
The manifestations of prolonged HAV forms were very different, ranging from jaundice, with dyspeptic manifestations, to abdominal pains, headache, myalgia, neurological affections.

Table 1

Clinical manifestations of HAV- prolonged forms

Clinical manifestations	Number of cases	%
Jaundice	58	100
Dyspeptic manifestations	56	96.55
Abdominal pain	50	86.20
Asthenia	48	82.75
Myalgia	27	46.55
Headache	15	25.86
Neurological manifestations	5	0.86

Dyspeptic manifestations were: inappetence, nausea, vomiting, epigastric reflux, and constipation. Pain manifestations occurred in different localizations: right hypochondrium, diffuse abdominal pain that is similar to renal colic, biliary and appendix pain. Further neurasthenic symptoms had the following aspects: asthenia, mild cerebral (nocturnal insomnia, somnolence, irritability and headache).

Paraclinical data emphasized the hepatocytolytic syndrome, dysmetabolic syndrome, cholestatic syndrome and inflammatory syndrome. Also, we performed ultrasonography in order to reveal the aspect of liver and biliary tract. Hepatocytolytic syndrome was determined in 100% of cases, GPT had values between 992–993 U.I. /ml and GOT has values between 92–3406 U.I. /ml, representing an increase of 3–24 times more than the normal value.

The observation of increased values of GPT was reviewed:

- 4–10 times more than the normal value in 5 cases, representing 8.6% of total cases, considered mild forms
- 10–20 times more than the normal values in 14 cases, representing 24.13% and considered moderate forms
- More than 20 times than normal in 39 cases representing 67.24% and were considered severe forms.

Dysmetabolic syndrome was determined by measuring Quick time. 21 cases (36.20%) had prolonged Quick time; prolonged Quick time is directly proportional to severe hepatic cellular lesions and is considered a prognostic value before any clinical sign appears. Also, alteration of glucose metabolism occurred in dysmetabolic syndrome, 32 patients (55.17%) had low values of glycaemia.

Alkaline phosphatase (ALP), gamma GT (GGT) and bilirubinemia were considered determinant for the cholestatic syndrome. ALP had been increased in 27 cases, representing 46.51%, that presented moderate increase in value parallel to relative rise of transaminases that show specific characteristic of hepato-cellular lesion. GGT rose more than 6 times in 36 cases (62.06%).

The usual tests for inflammation (ESR, CRP and fibrinogen) are negative in HAV. Dysproteinemia is usually present and was investigated through the Tymol test, which showed increased values in 49 cases (84.48%). It has been observed that in the majority of prolonged forms, cholestasis and affection of hepatic cell are present.

Other pathology associated with HAV caused prolonged evolution of the disease. The most frequent associated diseases were:

- Chronic liver diseases (chronic hepatitis and liver cirrhosis with or without hepatitis viruses) in 15 cases (25.86%)
- Lambliasis in 12 cases (20.68%)
- Biliary pathology in 11 cases (18.96%)
- Other acute infections (streptococcal anginas, pneumonias, urinary infections, angiocolitis) in 10 cases (17.24%).

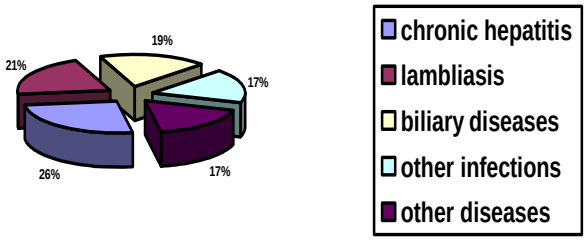

Fig 2. – Associated pathology with prolonged forms of HAV

As observed, the associated pathology produced fever, complications of disease and prolonged evolution. After discharge from hospital, the patients were reinvestigated at intervals of 1, 3 and 6 months. 12 cases (20.68%) were readmitted.
Pooled immune serum globulin is efficacious in the prevention and attenuation of disease in exposed individuals. More recently, active immunoprophylaxis by vaccination has been accomplished. Future eradication of this disease can now be contemplated.

CONCLUSIONS

1. In Bihor county the prolonged forms of HAV are mainly affecting the adult population (67.24%) and are more frequent in females (72.41%), in rural areas, especially surrounding the river Crişul Repede. The appearance of HAV is more frequent in spring and autumn.
2. Clinical forms are predominated by medium forms (47.02%), followed by mild forms (37.12%). 11.13% of patients presented simple prolonged forms, representing 77.58% of total prolonged forms, 13 of the cases (3.2%) had undulant forms, representing 22.42% of total prolonged forms.
3. HAV onset is manifested by dyspeptic syndrome (96.55%), neurasthenic syndrome (82.75%) and algic syndrome in 71% of cases.
4. Hepatocytolytic syndrome had been reported in all patients, with GPT values of 99–2993 U.I/ml and GOT values of 92–3406 U.I/ml; cholestatic syndrome was manifested in 62.06% of cases and dysmetabolic syndrome (alteration of prothrombin time and metabolic disorders) was noticed in 55.17% cases.
5. The majority of prolonged forms were associated with other diseases, which represented 82.74% of cases.

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