

The frequency of IgM-anti HEV in the sera of patients with hepatitis in Iraq.

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Abstract

Two hundred and fifty two patients with hepatitis were investigated in this study all cases gave negative result with HBs Ag, IgM-anti HCV, IgM-anti HAV, IgM-anti HDV and anti-HIV tests. The frequency of IgM-anti HEV was 57 and the percentage was 23 % in all ages but when these patients divided into five groups dependent on ages. The percentage of IgM-anti HEV was (9%) in age <10 and the highest percentage was shown in age 10 - 20 year (39 %) and this percentage declined when the age increase till to 0% in age >41 year.

Introduction

Hepatitis E Virus (HEV) occurs in epidemic form in developing countries, where water supplies are sometime locally contaminated. (1). Clinical HEV infection in countries where infection is endemic is most common in young adult but it also occurs to a lesser extent from childhood to old age (2). These appear to be considerable differences in exposure rates among countries where HEV is considered endemic: in Egypt around the age of 10, and this rate did not increase further with age (3,4), whereas in Nepal only 16 % of 12 years - old had evidence of exposure to HEV and the incidence peaked at 31% later in life (5). It is likely that the risk of clinical disease increase with age as with hepatitis A but while clinical HAV infection is uncommon in many developing countries because of high exposure rates in children (for example, 100 % HAV and a large proportion of the population remains susceptible. (6). there are two best methods for diagnosis of HEV infection: 1- Enzyme - linked immunosorbent assay (ELISA) for detection of antibodies (IgM in acute and primary infection & IgG for previous infection). 2- Transcription-polymerase chain reaction for detection of HEV - RNA (7, 8).

Materials and methods

Patients: two hundred and fifty two patients were collected from Central public of health. all cases were suffered from jaundice. The patients were divided into four groups ≤ 20 year (37 cases), 21 - 30 years (198 cases), 31 - 40 years (105 cases) and ≥ 41 year (12 cases). None of the investigated subjects experienced accidents or a mechanical stress which could have caused the jaundice. No one of cases has any antiviral or immunosuppressive drugs.

Samples: Five ml blood was collected in plain tube for serology, all sera store at-20°C till serological examination.

Enzyme Linked Immunosorbent assay (ELISA): This method was used to detect of IgM anti-HAV (Dade Bearing Merburg), IgM - anti HBc (Bio Kit, span), HBs Ag (Bio Kit, span), IgM-antiHDV(Bio Kit, span), IgM-antiHEV (Dade Bearing Merburg), IgM-anti HCV(Bio Kit, span) and Anti HIV-1(Bio Kit, span).

Results and discussion

All cases gave negative result with HBs Ag, IgM-anti HCV, IgM-anti HAV, IgM-anti HDV and anti-HIV tests and therefore these causative agents were excluded as a cause of jaundice (hepatitis) in the investigated samples. The frequency of IgM- anti HEV percentage was (9 %) in the age (< 10 year). The highest frequency of IgM- anti HEV percentage was observed in the age (10 -20 years) (39 %). The frequencies of positive percentage showed decline with increase ages till reach 0 % in age (>40 year).The positive percentage in all ages was 23 %. See table (1) and figure (1).

ages	Total	Anti HEV- IgM +	Positive percentage	Anti HEV- IgM -
<10	34	3	9%	31
10-20	56	22	39%	34
21-30	97	25	26%	72
31-40	37	7	19%	30
>41	28	0	0%	28
all ages	252	57	23%	195

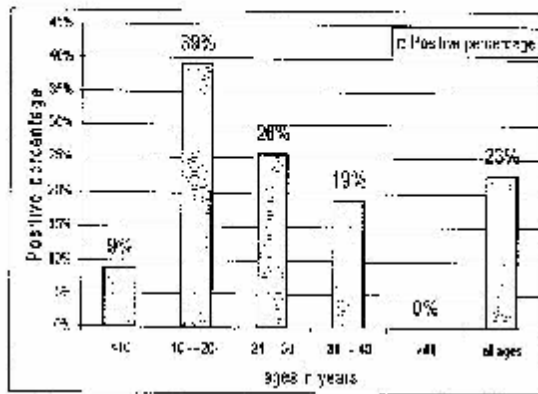


Figure-1- Positive percentage of IgM-anti HEV in patients with hepatitis in different ages.

These results go on particularly with other results obtained by some investigator in India (9). But deferent results were observed by other investigators in Egypt and Iraq (3, 4, 10). There are so many risk factor that plays an important role in transmission of HEV in population , traveling to endemic countries remain the greatest risk factor for clinical HEV infections but sporadic cases do occur in the absence of travel, risk factor for sporadic cases have not been clearly identified , but they may be different from HAV.(11) . There some evidence for increased exposure in groups with occupational exposure to swine (12) but HEV is common in many countries where swine are not kept and no risk has been identified from consumption of pork production. in developing countries , exposure to water contamination with human waste is a clear risk factor and close contact with domestic animals may also be a risk so importantly boiling of drinking water appears to be protective(13).the transmission of HEV in the industrial countries are occurred either in recent immigrants or in travelers who have been in HEV endemic areas (14) .Peak rate of HEV infection occur in the wet season in some countries where infection is endemic (for example Nepal , China, and India)associated with fecal contamination of water supplies (15).High percentages were found in infection with HEV in our country because the increasing in contamination of drinking water with sewage water , but the highest percentage was observed in age (10 -20 year) this make us predict this period of age is more exposure to contaminated water than others or this period of age is more traveling than others.

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الخلاصة

تضمنت الدراسة متذنب وثلاث وخمسون مريضاً يعانون من التهاب الكبد ز جميع الحالات أعطت نتيجة سلبية مع الاختبارات الالتهابية مستضدات سطح فيروس التهاب الكبد نمط ب- و أضداد صنف ميو لكل من التهاب الكبد نمط ب- و التهاب الكبد نمط أ ، التهاب الكبد نمط دلقا و أضداد فيروس العوز المناعي . عند تعينات التي تحمل أضداد صنف ميو لفيروس الكبد نمط ب-أ كانت 57 وكانت النسبة لكل الأعمار 23% و عند تقسيم الحالات حسب العمر وجد ان نسب صنف ميو لفيروس الكبد نمط ب-أ 9% في الفترة العمرية <10 ووجد أعلى نسبة في الفترة العمري 10-20 سنة ولكن لوحظ ان هذه النسبة تنخفض مع تقدم العمر التي ان تصل الى الصفر في الفترة العمرية < 41 سنة .