

Seroprevalence of Hepatitis (E) Virus Antibodies for Kidney Failure Patients in Bagubah City, Iraq

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Abstract: *Hepatitis (E) Virus is one of liver inflammation in adults, this study was done to specify and determine the ration of spread of specify antibodies (IgG) for hepatitis (E) virus, which was for kidney failure patients in bagubah city form 1/9/2013 to 1/4/2014, While the study included (80) patients who suffer from kidney failure. And Elisa technique and diagnostic kit was (DRG Diagnostics / U&A) to determine the level of specific antibodies (IgG) for hepatitis (E) virus ,the spread ratio of (IgG) for hepatitis was (22.5%) and no positive result for hepatitis (C, B) virus found, and there were it any Commotion or significant coefficient between the infection and the Age, Gender, Living Place and touching with farm animals and the source of drinking water. Also found that the spread ratio of (IgM) for hepatitis was (1.25%)*

Keywords: Hepatitis E, Seroprevalance, Immunoglobulin

1. Introduction

Hepatitis E virus a self-limiting acute hepatitis caused by hepatitis E virus (HEV) which can occur both in sporadic or epidemics foms. (Anderson 2010) hepatitis (E) virus is a wide spread liver, which transport by mouth and also can be transport by patient who had, acute or chronic kidney failure by the blood (Hosseim et. al, 2010).hepatitis (E) virus Classify as one of "Caliciviridae" family it's partial non- en capsulated and contain of RNA bar. (Mushahwar 2008), and hepatitis (E) virus one of widespread diseases in the developing Countries Specially in the south and the middle of Asia and the south and northern and western parts of Africa and mexico. (Takeniro etal 2004)

The transmission mode of HEV is mainly fecal-oral, and epidemics are typically caused by contamination of water. (Anderson 2010) There is disagreement about other means of viral transmission, and some researchers have maintained that fecal-oral transmission is the only route. (Koff 2003, Boxalletal 2006) However, recently other means of transmission such as skin contact, blood transfusion (Matsubayashi 2004) and mother – to – infant transmission have been proposed (Kramczynshi2003). In addition to this it can be transported from animal to human. (Tamura at al 2007, Renter etal 2000).

In terms of clinical symptoms, hepatitis E virus can not be differentiated from other viral hepatitis cases, the symptoms of hepatitis (E) virus will appear after (3-9) weeks incubation period and the symptoms are losing appetite, abdominal pain, Nausea (B) lcterus, Temperature degree increase, and also the patient suffer from the increasing of yellow dye and the activity of liver enzims who appear with the appear antibodies in blood. (Drobenine etal 2010)

Hepatitis (E) virus has complication on a pregnant mother which cause a high ratio of death reach (20%), and the studies refer to the cause of infection transport from infected mother to the fetal reach to (100%) (Oncu etal 2006).

The diagnosis of disease by using electronic microscope and polymerization interaction also by Elyisa technique to detect the antibodies (IgG) in patient serum (Mushahwar 2008).

The infection transport form the kidney failure patients who have a hepatitis (E) virus in the centers of blood filtration because of they don't clean or sterilization the equipment and the diagnosis tools (Tamara etal 2007).

The patient of kidney failure suffers from the resist will decreases against microbes which increase the infection of hepatitis. And the kidney failure patients which infected by hepatitis (E) virus was the source of infection movement. (Zakeh etal 2011, Gaetano etal 2015).

2. Work Method

This study was done from 1/9/2013 to 1/4/2014 when we collection (80) sample of kidney failure patients where they Consciously go to Baqubah hospital / Artificial kidney department for kidney cleaning and the information was registered about their Age, Gender, Living Place and touching with animals (form animals sheeps, Caws ...etc) and the source of drinking water. The blood serum was saved for each patient in (-20 C°) until the diagnosis will happen Elisa technique was used and also the (DRG Diagnostics / USA) to delete the antibodies (IgG) for hepatitis (E) virus of kidney failure. And the result was statistically analysis by using (Chi – Square Test) and finding (P- Value).

3. Results & Discussion

This study showed that the ratio of antibodies (IgG) spread for renal failure with hepatitis (E) virus was (22.5%) and (IgM) was (1.25%) and didn't show any positive result for hepatitis (B, C) virus.

This result agreed with most previous studies which refer to the widespread of hepatitis (E) virus by feeding and the Contaminated water, as well as the antibodies (IgG) are

continue for along time in blood. (Reuter etal 2009, Drobenine etal 2010).

The factors which effect on disease

1- Age :

Table (1) show that the age groups which are ready for infection is (41-60) year with insignificant faefor. The result agree with the previous studies which belongs to that hepatitis (E) virus infected the young and adult group and this group which be more contact with the outer space and the infection resources. (Mobaien etal 2013)

Table (1)

The ratio of antibodies (IgG) spread for kidney failure patients with hepatitis (E) virus according to age

Groups	No.	+	%	-	%	P-Value
20 years and less	7	1	14.23%	6	85.77%	0.598
21-40	19	3	15.7%	16	84.3%	
41-60	28	10	35.7%	18	64.3%	
20 years and more	26	4	15.3%	22	84.7%	
Total	80	18				

N.S.

2- Gender:

Table (2) shows there are no significant difference for Gender to the spread of (IgG) antibodies for hepatitis (E) virus. The increase in the incidence of may be to males exposure to infection than females because they survival time outside home requires them take food and water sources of contaminated virus particles and from documented scientifically the transmission mode of HEV is mainly fecal-oral and epidemics are typically caused by contamination of water. (Once etal 2006, Anderson 2010).

Table 2: The ratio of antibodies (IgG) spread for kidney failure patients with hepatitis (E) virus according to Gender

Gender	No.	+	%	-	%	P-Value
Males	48	12	25%	36	75%	0.218
Females	32	6	18.75 %	26	81.25%	
Total	80	18				

N.S.

3- Living or place:

The result of table (3) leads us to that there are on significant difference for the living place to the ration of (IgG) antibodies spread for hepatitis (E) virus. And this depend on the living Circumstances and how much the using water for drinking or the house working cont aminated with the Virus the use of the surface water drainage system after domestic use and use heavy water collection tanks in house. This may be why drinking water contamination, especially since most piping water old houses and pronetofracture. (Matsuda etal 2003).

Table 3: The ratio of antibodies (IgG) spread for kidney failure patients with hepatitis (E) virus according to Place

Place	No.	+	%	-	%	P-Value
Countryside	32	7	21.8%	25	78.2%	0.411
City	48	11	22.9%	37	77.1%	
Total	80	18				

N.S.

4- Touching with form animals:

Table (4) show that there are no significant difference of to touching animals – which the study showed that the renal failure patients which they don’t have any touching with form animals more infected that the countryside. And this may be because taking milk and its products which lacking of a good sterilization (Vasickova, etal 2007).

Table 4: The ratio of antibodies (IgG) spread for kidney failure patients with hepatitis (E) virus according to touching with form animals

touching with form animals	No.	+	%	-	%	P-Value
yes	29	6	20.68%	23	79.32%	0.4118
no	51	12	23.5%	39	76.5%	
Total	80	18				

N.S.

5- Drinking water Sources:

The result show as drawn in table (5) there are no significant difference between the drinking water sources and spread of (IgG) antibodies of hepatitis (E) virus, and this belong to that any drinking water sources effect mainly on the infection spread but it deepened on the water contaminated used for drinking and other home works, as indicated earlier, most scientific studies the cause of the epidemics of HEV back to faecal contamination of water used for drinking and household use. (Peyman et. al. 2015).

Table 5: The ratio of antibodies (IgG) spread for kidney failure patients with hepatitis (E) virus according to drinking water sources

drinking water sources	No.	+	%	-	%	P-Value
Home water	73	15	23.1%	58	76.9%	0.953
Well-river	7	3	20%	4	80%	
Total	80	18				

N.S.

References

- [1] Anderson DA.(2010). Hepatitis E virus In: Mandell GL, Douglas RG, Bennett JE, eds. Principles and practice of infectious diseases, 7th ed. Philadelphia cturchill living ston, 2411-2421.
- [2] Boxall E., Herborn A. Kochethu G., Pratt G., Adams D., Ijaz S., etal.(2006). Transfusion transmated hepatitis E in nonhy perendemic country. Transfus Med.16 (2):79-81.
- [3] Dncu S., Oncu S., Okyay P., Ertug S., sakarya S.; (2006). Prevalence and risk factors for HEV infection in pregnant women. Med. Sci Monit. 12(1) 36-39.
- [4] Drobenine J., Meng J., Reuter G., Green – Mocefort. T., khndyakova N., Dimitrova Z., kamili S., Teo CG. (2010) Serology assays specific to immunoglobulin M antibodies against hepatitis E virus: pangenotypic evaluation of performances: Clin. Infect. Dis. 51:24-27.
- [5] Gaetano S., Filippo A. Gluseppe G., Domenico M. m Mario Q., Antonio G., Barbara I., Paolo D C., Salvator M. Giovnna S., Fabio B., Vincenzina F. (2015). Hepatitis E in hemodialysis and kidney

- transplant patients in south – east Italy. *World J. Gastroenterology*. 21 (11) 3266-3273.
- [6] Hosseim – Moghaddam S.M. Zarel A., Alavion S.M., Mansouri M., (2010) Hepatitis E Virus infection: a general review with a focus on hemodialysis patients *AM.J. Nephrol.*31(5):398-407.
- [7] Koff RS.(2003). Hepatitis A and E. In: Zakim D., Boyer TD., eds. *Hepatology: a textbook of liver disease*, 4th ed Philadelphia, Saunders, 939-958.
- [8] Krawczynski K., Aggarwal R., (2003). Hepatitis E In: Schiff ER., Sorrel MF., Maddrey WC., eds. *Schiff's disease of the liver*, 9th ed. Philadelphia, Lippincott Williams, 880-890.
- [9] Matsuda H. Okada K., Takahashi K., and Mishiro S., (2003). Severe hepatitis E Virus infection after ingestion of uncooked liver from a wild boar. *J. Infect. Dis.* 188 : 944.
- [10] Matsubayashi K et al.(2004). Transfusion- transmitted hepatitis E caused by apparently indigenous hepatitis E virus strain in Hokkaido. *Japan. Transfusion.*44:934-940.
- [11] Mobaien AR., Mohammed R., Soroun R., Sadeghi K., (2013). Hepatitis E Virus seroprevalence in hemodialysis patients in Zanjan province, Islamic Republic of Iran. *EMHJ* 19 (7) : 608-612.
- [12] Mushahwar IK., (2008) Hepatitis E Virus: molecular virology, Clinical feature, diagnosis, transmission, epidemiology and prevention. *J. Med. Virol.* :80:646 – 658.
- [13] Peyman E., Mojgan M. Morzieh J., (2015). Seroprevalence of Hepatitis E Among Hemodialysis patients : A Report From Hamadan, Iran. *Hepat. Mon.* 15(5) : e 26260.
- [14] Reuter G., Fodor D., Forgach P. m Kaitai A. Szucs G., (2009) Characterization and zoonotic potential of endemic hepatitis E Virus (HEV) strains in humans and animals in Hungary *J. Clin. Virol.* 44:277-281.
- [15] Takeniro M., Yukie T., Chikao Y., Kazuo M. Fumio T., Masaharu T., Tsutomu M., Hivoaki O., (2004) Prevalence of hepatitis E virus infection among hemodialysis patients in Japan Evidence for infection with genotype 3 HEV by blood transfusion *J. Med. virol.* 74:(4) : 564-572.
- [16] Tamura A., Shimizu Yk., Tanaka T., Kuroda K., Arakawa Y., Takahashi K., et al. (2007). Persistent infection of hepatitis E virus transmitted by blood transfusion in patient with T – cell lymphoma. *Hepatology Res.* 37 (2) 13-20.
- [17] Vasickova P., Psikal I., Kralik P., Widen F., Hubalek Z., Pavlik I., (2007). Hepatitis E Virus review. *Veterinarni medic.* 52 (9) : 365 – 384.
- [18] Zakieh R.K., Nariman S., Sima M., (2011). Seroprevalence of Hepatitis E among Iranian Renal Transplant Recipient. *Hepat. Mon.* 11 (8) : 646-651.