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Incidence of Hepatitis B Virus And Hepatitis C Virus among out Patients Attendingal-Ramadi Teaching Hospital and Al-Ramadi Teaching Hospital for Women and Children, Ramadi, Anbar, Iraq

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Abstract:

Even though a vaccine is available for viral Hepatitis, bothHBVand HCVinfection arestill as a community health problemglobally. High mortalityrate of Iraqi population during the last 20 years led to change the occurrence of this infection.The present study wasestablished to estimate the incidence of HBV and HCV among the Iraqi patients attending AL-Ramadi teaching hospital and Al-Ramadi teaching hospital for women and children, Ramadi city in Anbar Governorate, Iraq.In this cross-sectional study, 719 Iraqi patients attending AL-Ramadi teaching hospital and Al-Ramadi teaching hospital for women and children were included. These samples were verified for confirmation of hepatitis B surface antigen (HBsAg) and HCV antibody (HCV-Ab).As a result, from thewhole of 719patients, 546 cases (75.94%) were positive for HBV, while 173 cases (24.06%) were positive for HCV. The highest number of infections was found in the age group of 25 – 50 years (392 cases), followed by 50 – 75 (183 cases), 10 – 25 (135 cases) and 0 – 10 (9 cases). The commonness rates of HBV among the out patientsare nearly threefold higher than that found in HCV out patients. This may put extra encumbrance on the Iraqi health institution.

Abbreviations: HBV (hepatitis B virus), HCV (hepatitis C virus), HIV (human immunodeficiency virus), HBsAg (hepatitis B surface antigen) andHCC (hepatocellular carcinoma)

Introduction:

Viral Hepatitis types B and C still characteriseas an internationally health problem. Essentially, they are transmitted by direct connection with the infected blood, use of IV medications, blood transfusion, and sexuality in HBV infection (1). Presently, it was became as a chronic infection in excess of 350 million cases with HBV and 150 million cases with HCV(2).These two types of infection led to several serious complication such as liver cirrhosis, liver failure and hepatocellular carcinoma (HCC). Daily, more than 1milion people died as a result form HBV infection and its consequence.Globally,400 million people are infected by HBV with a higher distribution in China, Africa and south-east of Asia (3). While, from 170 million of infected peoplewithHCV about 10000 people are died from this infection.These numbers are estimated to be nearly 7% of the entire people with HBV while HCV infection is about 3% of the whole population,It is shown form the previous studies in Iraq that the incidence of HBVand HCV were 0.78% , 0.2% and 0.1% respectively (4,5). In addition, there is a coinfection between HBV and HDV in which liver cirrhosis, hepatocellular carcinoma and fulminant hepatitis are higher in HBV-HDVcoinfectionthan the infection with HBV alone (6,7).

Recently, there is a higher increase in the mortality and morbidity of these infections due to peoplemigrancy specially during wars, respiratory tract infection (COVID-19) and diarrheal

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diseases, tuberculosis and blood donor (8). This is also related to the viability of important types of vaccination available in that country, so that traveling from regions with a less available vaccination agenda likes Syria to a country with successful vaccination schedule as Iraq led to an increase in the incumbrance of new environments (9).The present study has an aim to estimate and characterize the incidence rates of HBV and HCV in the Iraqi patients attending AL-Ramadi teaching hospital and Al-Ramadi teaching hospital for women and children in Ramadi City, Anbar, Iraq.

Methods:

samples collection:

A total of 719 of blood samples were gathered from Iraqi patients attending AL-Ramadi teaching hospital and Al-Ramadi teaching hospital for women and children in Ramadi city,started from 17th July to the end of December 2019. In which 5 mL of bloodsamples were collected from each patient. Then centrifuged at 1500 rpm for 5 min. for serum separation, stored at -20°C tilluse.

Sample's analysis:

An enzyme linked immunosorbent assay (4thgeneration) was used for determination of positive HBsAg,HBcAb and Anti-HCV-Ab. This was performed according to the instructional manual of the commercially DIA.PRODiagnostic Bioprobes ELISA kit from Italy. In brief, a specifically primary monoclonal antibodies to HBsAg and HBcAb were setin the bottommostpart of microplate. Afterward, blood serums were added to thismicroplate, the addition of horseradish peroxidase (HRP) (Secondary conjugated monoclonal-antibody) was as targeting for the primary monoclonal antibodies. After that, the free serum protein and the conjugated HRP were wash away. this enzymatic reaction was obstructed and substrate was added. Lastly, the optical density of individually reactions was valued by an ELISA reader. In the same way Anti-HCV-Abwere identified according to the same type ofELISA-3 which include HCV core Ags and HCV non-structural genes.

Statistical analysis:

Data were calculated by the use of the SPSS type 21.

Results:

In the present work, 719 of blood samples were obtained from Iraqi patients attending AL-Ramadi teaching hospital and Al-Ramadi teaching hospital for women and children in Ramadi city, started from 17th July to the end of December 2019.In which 546 cases (75.94%) were positive for HBsAg. Whereas 173 cases (24.06%) were positive for HCVas shown in Figure 1. The maximum quantity of infection was recognised in the age group of 25 – 50 years (392 cases), followed by 50 – 75 (183 cases), 10 – 25 (135 cases) and 0 – 10 (9 cases) Figure 2. There are no significant differences (p=0.167) inboth types of hepatitis infection include 46.50% of females and53.50% of males as seen in Figure 3.

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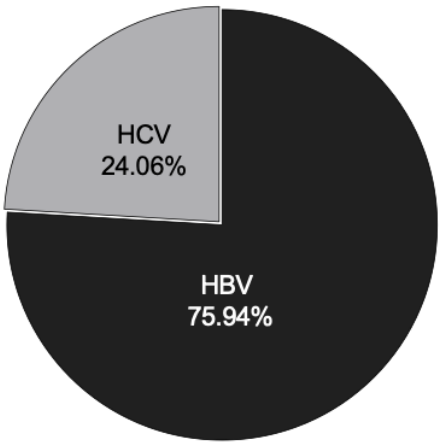

Figure 1. Distribution of HBV and HCV among the study cases.Keys features are marked.

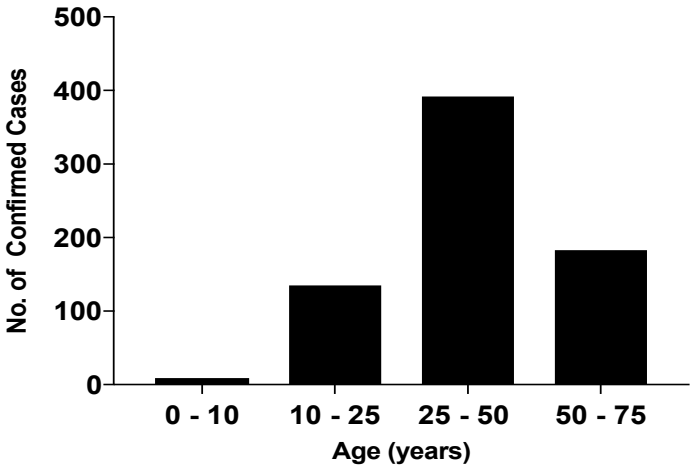

Figure 2. Thenumbers of HBV and HCV infections according to age groups. Keys features are marked.

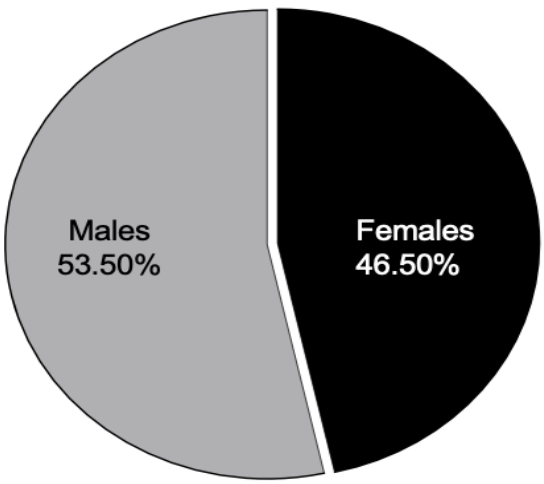

Figure 3. Thepercentage of HBV and HCV infections according to gender. Keys features are marked

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Discussion:

Diseasescauses by HBV and HCVbecame as a serious problem in the health care section, particularly in the developednations. Lately, severalnumbers of these countries beganmotivatedplans to deals with these infections. In the Iraqi health care section, the addition of HBV vaccine to the schedule of vaccination was achieved in the middle of the 1980s as a yeast derivative of DNA recombination (10). Moreover, an assessmentserieswereaccomplishedin order to diagnosethe occurrence of HBV and HCV. Nevertheless, after the latest war in 2013, the majority of prophylacticagendaswere malformed in thewar-ravaged cities such as Al -Anbar,Nineveh and Saladin. Undoubtedly.These diseases became as a one of the most challenging risks facing both populations (11). The presentworkhas an aimed to determine the occurrence of HBV and HCVinthe Iraqi patients attending AL-Ramadi teaching hospital and Al-Ramadi teaching hospital for women and children in Ramadi city. As well as the distribution of these two types of infection according to age during a period started from 17th July to the end of December 2019.

The results of this study show a significant difference (p=0.0056) between HBV and HCV infection 76% and 24% respectively,the highestnumber of infections was detacted in the age group of 25 – 50 years (392 cases),While the lowest incidence was founded in the age group of 0 – 10 years (9 cases), the same results was observed in a study of age associated with HBV and HCV in Turkey (minimum incidence at age group 0-12 whereas maximum at age group 31-60) (12). This is maybe due to higher percentage of straight contact with blood, throughout the use of instruments that required for IV drugs, solution, transfusion of blood and/or blood produces, and sexual relation (13). likewise, no significant differences (p= 0.167) were detected for HBV and HCV between 46.5% of females and 53.5% of males.Conversely, this does not exclude the requirement for educational programs about bothHBV and HCVroutes of transmission.

To conclude, the frequency of HBV in Iraqi out patients wasapproximately threefold higher than that found in HCV out patients, a lowest incidence was indicated in the ages between 0-9 years whereas the highest incidence in the ages between 25 – 50 years. An urgent actionsand schemesarenecessary to definethe effective HBV disease,handleappropriately and plusenforceprotectiveprocedures to stop the increase of the illness.As well as a further study on the association between these two illnesses with the human immunodeficiency virus (HIV) in this city. This may put extra encumbrance on the Iraqi health institution.

Integrities:

This work was permitted by the scientific committee in biology department, college of Science, University of Anbar, Ramadi, Anbar, Iraq. Printed conversant permission was gotten from all institutions earlier than the data recording.

Conflict of Interest: No conflict of interest was declared by the authors.

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References:

1. Tarky, A., Akram, W., Al-Naaimi, A. & Omer, A. Epidemiology of viral hepatitis B and C in Iraq: a national survey 2005-2006. Zanco J. Med. Sci. 17, 370–380 (2013).
2. Hussein, N. R. et al. Prevalence of HBV, HCV and HIV Infections Among Syrian Refugees in Kurdistan Region, Iraq. Int. J. Infect. 4, e39420 (2017).
3. Lai, C. L., Ratziu, V., Yuen, M.-F. & Poynard, T. Viral hepatitis B. Lancet (London, England) 362, 2089–2094 (2003).
4. Bozicevic, I., Riedner, G. & Calleja, J. M. G. HIV surveillance in MENA: recent developments and results. Sex. Transm. Infect. 89 Suppl 3, iii11-16 (2013).
5. Hussein, N., Rasheed, Z., Taha, A. & Shaikhow, S. The Prevalence of Hepatitis D Virus Infection amongst Patients with Chronic Active Hepatitis B Virus Infection in Duhok Governorate. 28, 1–7 (2015).
6. Rizzetto, M. Hepatitis D: thirty years after. J. Hepatol. 50, 1043–1050 (2009).
7. Fonseca, J. C. F. da. [Hepatitis D]. Rev. Soc. Bras. Med. Trop. 35, 181–190 (2002).
8. Allain, J.-P. et al. Infectivity of blood products from donors with occult hepatitis B virus infection. Transfusion 53, 1405–1415 (2013).
9. Gushulak, B. D. & MacPherson, D. W. Globalization of infectious diseases: the impact of migration. Clin. Infect. Dis. an Off. Publ. Infect. Dis. Soc. Am. 38, 1742–1748 (2004).
10. Romanò, L., Paladini, S. & Zanetti, A. R. Twenty years of universal vaccination against hepatitis B in Italy: achievements and challenges. J. Public health Res. 1, 126–129 (2012).
11. Turky, A., Akram, W., Al-Naaimi, A., Omer, A. & Al-Rawi, J. Analysis of acute viral hepatitis (A and E) in Iraq. Glob. J. Health Sci. 3, 70 (2011).
12. Guclu, E., Ogutlu, A. & Karabay, O. A Study on the Age-Related Changes in Hepatitis B and C Virus Serology. Eurasian J. Med. 48, 37–41 (2016).
13. Yang, S. et al. Transmission of Hepatitis B and C Virus Infection Through Body Piercing: A Systematic Review and Meta-Analysis. Medicine (Baltimore). 94, (2015).