



RATE OF HEPATITIS A DISEASE AMONG INFECTED PEOPLE IN IRAQ, A RETROSPECTIVE STUDY

Ahmed Habib Kadhim* and Ahmed Saleh Odhaib**

*Master of Science in Nursing Administration. MOH. Baghdad. Iraq.

**Master of Science in Children's Nursing. MOH, Baghdad. Iraq. Email Id: Otheeb25@gmail.com

***Corresponding Author: Ahmed Habib Kadhim**

Master of Science in Nursing Administration. MOH. Baghdad. Iraq.

Article Received on 06/05/2020

Article Revised on 26/05/2020

Article Accepted on 16/06/2020

ABSTRACT

Hepatitis A is considered one of the most common causes of epidemics that spread among school students, in camps, and in collective housing. This study aimed to determine the rate of hepatitis A among people from 2014 to 2018. A retrospective observational study was conducted in all 18 Iraqi governorates; both urban and rural areas by using the secondary data for 5 year. Analyses were conducted by using the SPSS software version 22. Values were reported as the frequency, percentage, and *p* value of less than 0.05 was considered significant for all statistical tests. Out of 28234, 15611/28234(55.3%) were male cases and 12623/28234(44.7%) were female cases, the higher percentage of cases occurred in 2015, followed by 2018, 2016, 2014, respectively. The highest percentage of cases occurred in the age groups 1-19 years old. The rate of hepatitis A was higher 2.16 in 2015 and 2.07 in 2018. Planning to implement large-scale immunization programs against it must involve accurate economic assessments, and consider alternative or additional methods of prevention, such as improved sanitation services, and health education on improving hygiene practices.

KEYWORD: Hepatitis A, Rate, Observational, Iraq, Age.

INTRODUCTION

Hepatitis A is considered one of the most common causes of epidemics that spread among school students, in camps, and in collective housing.^[1] So, it is an acute inflammation of the liver that occurs due to infection with the hepatitis A virus.^[2] The disease is common and most children (90%) are infected with the hepatitis A virus before reaching the age of ten in low- and middle-income countries with poor sanitation and hygiene practices, and often these symptoms do not appear in these children.^[3] Epidemic cases rarely occur because older children and adults are generally immune to it.^[4] The incidence of symptoms of the disease in these areas is low and it is rare for outbreaks to break out.^[5] Infection rates are low in high-income countries with good sanitation and hygiene conditions.^[6] The disease may fall among adolescents and adults in high-risk groups such as injecting drug users, men who have sexual relations with men and those traveling to areas endemic to the disease at high rates, and in isolated population groups such as closed religious communities.^[7] In the United States of America, major outbreaks have been reported among the displaced.^[8] The virus is transmitted through contaminated food or drink in the stool of an infected person, so infection can occur in several ways: eating food prepared by a person with hepatitis A without washing his hands after leaving the

toilet, eating fruits or vegetables contaminated with the droppings of an infected person, drinking water contaminated with the virus, use a shared toilet with an infected person without washing hands well after going out, not washing hands after changing an infected baby's nappy.^[9,10] Hepatitis A usually heals without causing permanent damage to the liver.^[11] Rather, the infection gives life-long immunity.^[12] However, in 0.5% of cases, stunning hepatitis may occur, causing severe hepatic impairment that results in death and this occurs in people with weakened immunity or those with chronic liver infections such as cirrhosis or chronic hepatitis B virus.^[13] This study aimed to determine the rate of hepatitis A among people from 2014 to 2018.

METHODS

A federal survey, which was a retrospective observational study by using the secondary data, was a part of a national study designed to provide national statistics on the health of Iraqi civilians. The national survey was conducted in all 18 Iraqi governorates; both urban and rural areas were included. Ethical approval was cross checked by Iraq Ministry of Health (MOH). We conducted this for 5 year; it started from 2014 up to 2018. A case was defined as having acute hepatitis A when there was positive/equivocal HAV IgM together with elevated liver enzymes. The totals of 28234 cases

were entered in this study. Analyses were conducted by the using SPSS software version 22. Pearson's chi-square test for numerical variables and categorical variables were used. Values were reported as the frequency, percentage, and *p* value of less than 0.05 was considered significant for all statistical tests.

RESULTS

Out of 28234, 15611/28234(55.3%) were male cases and 12623/28234(44.7%) were female cases. Thus, in this table show that the higher percentage of cases occurred in 2015, followed by 2018, 2016, 2014, respectively.

There is highly significant association between the gender and years at the *p* value < 0.0001 [Table 1]. In table 2 Shows that the highest percentage of cases 15627/28234 (55.4%) occurred in the age groups 1-9 years old, followed by 10833/28234 (38.4%) in the age groups 10-19 years old and the less percentage 226/28234 (0.8%) in the age less than 1 years. There is highly significant association between the age groups by years at the *p* value < 0.0001 [Table 2]. The rate of hepatitis A was higher 2.16 per 100.000 of population in 2015, followed by 2.07 in 2018, and the lower rate was 0.76 in 2017[Figure 1].

Table 1: Distribution of studied samples according to gender during 2014 to 2018.

Years	Gender		Total
	Male	Female	
	Frequency %	Frequency %	Frequency %
2014	2640 55.9	2083 44.1	4723 100
2015	4388 55.1	3582 44.9	7970 100
2016	2698 55.8	2135 44.2	4833 100
2017	1560 55.1	1273 44.9	2833 100
2018	4325 54.9	3550 45.1	7875 100
Total	15611 55.3	12623 44.7	28234 100
P. Value < 0.0001			

Table 2: Distribution of studied samples according to age groups during 2014 to 2018.

Years	Age groups (Years)					Total
	Less than 1	1-9	10-19	20-44	More than 45	
	Frequency %	Frequency %	Frequency %	Frequency %	Frequency %	Frequency %
2014	52 1.1	3182 67.4	1222 25.9	223 4.7	44 0.9	4723 100
2015	48 0.6	5078 63.7	2512 31.5	291 3.7	41 0.5	7970 100
2016	55 1.1	3245 67.1	1367 28.3	127 2.6	39 0.9	4833 100
2017	15 0.5	1814 64.0	893 31.5	90 3.2	21 0.7	2833 100
2018	56 0.7	2308 29.3	4839 61.5	395 5.0	277 3.5	7875 100
Total	226 0.8	15627 55.4	10833 38.4	1126 3.9	422 1.5	28234 100
P. Value < 0.0001						

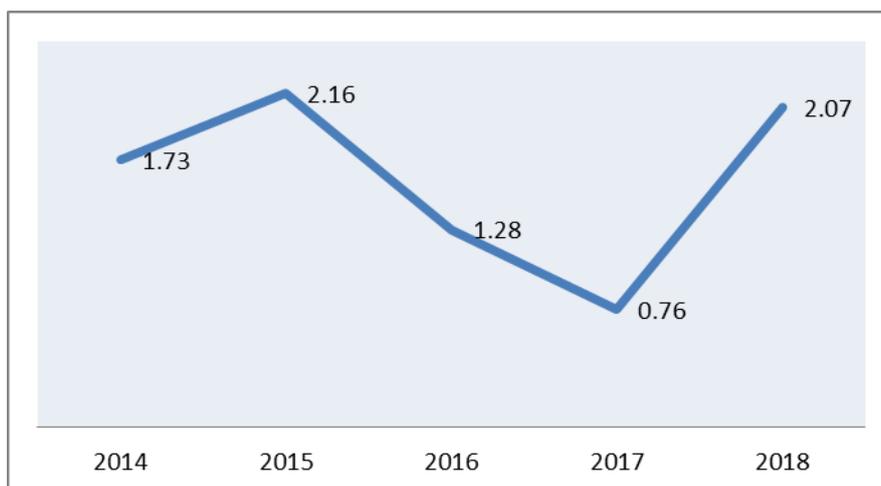


Figure 1: Rate of Hepatitis A in Iraq during 2014 to 2018.

DISCUSSION

This study aimed to determine the rate of hepatitis A among people from 2014 to 2018. The gender difference has been related with hepatitis A. Mostly, the male cases were more than female because of the lifestyle and attitudes for males. In our study, we found that the male cases were 55.3% more than the female cases 44.7%. Compared with a study in Korea^[14], the authors found the male cases 55.1% and the female cases were 44.9%. Also, a study in China^[15], revealed a total of 206405 were male and 106330 were female (66% and 34%, respectively); a male-to-female case ratio of 2:1. In addition, a study in Indonesia^[16], they reported the female cases 65% were higher more than male cases 35%. Another study in Yemen^[17], they reported fifty two percent of participants were male, most were ≤ 18 (364, 67.7%) and 168 (31.2%) were under 5 years old. In our study, we found the higher percentage of cases were in the groups under 20 years groups 94.6%, compare this result with other study in India.^[18] They mentioned the higher percentage 56.6% % of cases were in the age groups 6 to 10 years old. In a study in Korea^[19], they mentioned the higher percentage 29.2% of cases were in the age groups 30 to 39 years old. Therefore, a study in US^[8], Declines were greater among children aged 2 to 18 years (87%) than among persons older than age 18 years (69%); the proportion of cases in children dropped from 35% to 19%. Since 2001, rates in adults have been higher than among children, with the highest rates now among men aged 25 through 39 years. In Italy, the incidence of hepatitis A was highest among persons aged 15-24 years.^[20] A study in Iran^[21], they reported the results of univariate logistic regression analysis show that HAV prevalence is significantly associated with increasing age (45+ and 26-45 vs. 1-25; OR = 11.423, 95% CI: 3.422-38.135 and OR = 17.551, 95% CI: 5.277-58.376, respectively).

CONCLUSION

we concluded that the male with hepatitis were higher percentage more than female cases. The majority of hepatitis cases occurred in the age groups 1 to 20 years

old. There are highly significant associations between the years and gender, age at the p . value < 0.0001 . The rate of hepatitis was higher in 2015 and 2018. Hepatitis A vaccination should be given as part of a comprehensive plan to prevent and control viral hepatitis. Planning to implement large-scale immunization programs against it must involve accurate economic assessments, and consider alternative or additional methods of prevention, such as improved sanitation services, and health education on improving hygiene practices.

REFERENCES

1. Matheny SC, Kingery JE. Hepatitis A. *Am Family Phys.*, 2012; 86(11): 1027-1034.
2. Al-Aziz AM, Awad MA. Seroprevalence of hepatitis A virus antibodies among a sample of Egyptian children. *East Mediterr Health J.*, 2008; 14: 1028-1035.
3. Letaief A, Kaabia N, Gaha R, Bousaadia A, Lazrag F, Trabelsi H, Ghannem H, Jemni L. Age-specific seroprevalence of hepatitis a among school children in central Tunisia. *Am J Trop Med Hyg.*, 2005; 73: 40-43.
4. Tufenkeji H. Hepatitis A shifting epidemiology in the Middle East and Africa. *Vaccine*, 2000; 18 Suppl 1: S65-S67.
5. Ishii K, Kiyohara T, Yoshizaki S, Kawabata K, Kanayama A, Yahata Y, Takahashi T, Kinoshita H, Saitou T, Sunagawa T, et al. Epidemiological and genetic analysis of a 2014 outbreak of hepatitis A in Japan. *Vaccine*, 2015; 33: 6029-6036.
6. World Health Organization. Hepatitis A. WHO Web Site; 2019 [updated 19 Sep 2018; cited 3 May 2019]; Available from: <https://www.who.int/en/news-room/fact-sheets/detail/hepatitis-a>.
7. Lin KY, Chen GJ, Lee YL, Huang YC, Cheng A, Sun HY, Chang SY, Liu CE, Hung CC. Hepatitis A virus infection and hepatitis A vaccination in human immunodeficiency virus-positive patients: A review. *World J Gastroenterol*, 2017; 23: 3589-3606.

8. Wasley A, Samandari T, Bell B. Incidence of hepatitis A in the United States in the era of vaccination. *JAMA.*, 2005; 294: 194–201. 10.1001/jama.294.2.194.
9. Severi E, Tavoschi L, Carillo Santistevé P, Bonfigli S, Westrell T, Arnheim Dahlstrom L, et al. Hepatitis A incidence in the EU: what can we learn from the available data? *J Viral Hepat*, 2015; 22(S2): 1–18.
10. Ott JJ, Irving G, Wiersma ST. Long-term protective effects of hepatitis A vaccines. A systematic review. *Vaccine*, 2012; 31(1): 3–11.
11. Hamza H, Abd-Elshafy DN, Fayed SA, Bahgat MM, El-Esnawy NA, Abdel-Mobdy E. Detection and characterization of hepatitis A virus circulating in Egypt. *Arch Virol.*, 2017; 162: 1921–1931.
12. Venczel L, Brown S, Frumkin H, Simmonds-Diaz J, Deitchman S, Bell BP. Prevalence of hepatitis A virus infection among sewage workers in Georgia. *Am J Ind Med.*, 2003; 43: 172–178.
13. Melhem NM, Talhouk R, Rachidi H, Ramia S. Hepatitis A virus in the Middle East and North Africa region: a new challenge. *J Viral Hepat.*, 2014; 21(9): 605–615.
14. Seo JY, Choi S, Choi B, Ki M. Age-period-cohort analysis of hepatitis A incidence rates in Korea from 2002 to 2012. *Epidemiol Health*, 2016; 38: e2016040.
15. Cui F, Hadler SC, Zheng H, Wang F, Zhenhua W, Yuansheng H, et al. Hepatitis A surveillance and vaccine use in China from 1990 through 2007. *J Epidemiol*, 2009; 19: 189–195.
16. Setyowati D, Mubawadi T, Mirasa YA, et al. Molecular epidemiology of hepatitis A outbreaks in two districts in Indonesia in 2018: Same subtype, but different strains. *Biomed Rep.*, 2020; 12(2): 51-58.
17. Bawazir AA, Hart CA, Sallam TA, Parry CM, Beeching NJ, Cuevas LE. Seroepidemiology of hepatitis A and hepatitis E viruses in Aden, Yemen. *Trans R Soc Trop Med Hyg.*, 2010; 104: 801–5.
18. Malhotra B, Kanwar A, Reddy PVJ, et al. Molecular characterization of hepatitis A virus from children hospitalized at a tertiary care centre in northwest India. *Indian J Med Res.*, 2018; 147(5): 507-512.
19. Moon S, Han JH, Bae GR, Cho E, Kim B. Hepatitis A in Korea from 2011 to 2013: current epidemiologic status and regional distribution. *J Korean Med Sci.*, 2016; 31: 67–72.
20. Tosti ME, Spada E, Romanò L, Zanetti A, Mele A SEIEVA collaborating group. Acute hepatitis A in Italy: incidence, risk factors and preventive measures. *J Viral Hepat.*, 2008; 15: 26–32.
21. Behzadi MA, Leyva-Grado VH, Namayandeh M, et al. Seroprevalence of viral hepatitis A, B, C, D and E viruses in the Hormozgan province southern Iran. *BMC Infect Dis.*, 2019; 19(1): 1027. Published 2019 Dec 3.