

Original Article

Helicobacter Pylori in Patients with Hepatitis C Virus

Niamat Ali,¹ Nosheen Zafar,² Adnan Aslam,¹ Umbreen Aslam,²
Muhammad Kashif Bashir,³ Huma Ashraf⁴

Abstract

Objective: To determine the frequency and association of Helicobacter Pylori (H. Pylori) infection among patients infected with hepatitis C virus (HCV).

Methodology: The study was conducted in Services Institute of Medical Sciences, Lahore. A total of 200 cases fulfilling the inclusion/exclusion criteria were enrolled from Medical OPD Services Institute of Medical Science, Lahore. An informed consent of the patients was taken to include their data in the study. Detailed history for hepatitis C virus was taken. Blood samples were collected and sent to the hospital laboratory for evaluation of presence/absence of H. Pylori in the subjects of HCV.

Results: In this study, out of 200 subjects, 32%(n=64) aged 30-50 years while 68%(n=136) aged 51-80 years, and the mean S.D was calculated as 53.99+8.67 years. 54%(n=108) males and 46%(n=92) females were included. The frequency of H. Pylori in subjects with HCV was recorded in 37.5%(n=75) whereas 62.5%(n=125) had no findings of the morbidity.

Conclusion: The frequency of H. Pylori is higher in patients of Hepatitis C.

Keywords: Hepatitis C virus, Helicobacter Pylori, Peptic Ulcer

How to cite: Ali N, Zafar N, Aslam A, Aslam U, Bashir AK, Ashraf H. Helicobacter Pylori in Patients with Hepatitis C Virus. MedERA- Journal of CMH LMC and IOD. 2021;3(2): 4-7.

DOI: <https://doi.org/10.5281/zenodo.xxxxxx>

Introduction

Globally, chronic hepatitis C is considered as a potential threat to the population. Millions of people are infected throughout the world.¹ About

30-40 percent of population of USA have H. Pylori. Worldwide, more than one billion people are affected with H. Pylori. Internationally, the leading cause of end stage liver disease is Chronic Hepatitis caused by Hepatitis C virus.² The spread of this infection is inconsistent and dependent upon various factors. A lot of these factors have been identified, yet a lot more remain unknown. The rate of incidence of its progression, decompensation and the risk of developing carcinoma differ around different areas of the world.³ Cirrhotic and a decompensated liver can also stem up from H. Pylori co-infection with Hepatitis C. Acute peptic ulcers, which are principally caused by H. Pylori, are commonly found (one-third) among the patients of cirrhosis of liver.³ Infec-

1. Niamat Ali
2. Nosheen Zafar
3. Adnan Aslam
4. Umbreen Asla
5. Muhammad Kashif Bashir
6. Huma Ashraf

1,3: Medical Unit IV SIMS/Services Hospital, Lahore.

2,4: Medical Unit-2 FJMU/SGH, Lahore.

5. Medical officer, Department of Pediatric Medicine, DHQ Hospital, Sheikhpura.

6. CMH LMC & IOD/NUMS Lahore.

Correspondence:

Dr. Niamat Ali, Department of Medical Unit IV SIMS/Services Hospital, Lahore.
E-mail: niamat.ali82@yahoo.com

Submission Date: 12-09-2021
1st Revision Date: 18-12-2021
Acceptance Date: 20-01-2022

ting world population very frequently, H. Pylori are gram negative bacteria that reside and replicate in the gastric epithelium. The prevalence of the disease is directly correlated with increase in the age and decrease in the socioeconomic status and is commonly found in early years of life.⁴ The bacteria mainly induce CAG, IM, and ED. Although above 50% of the worldwide population is already infected with these bacteria, yet only a very small percentage of people develop carcinoma of stomach.⁵ A previous study⁶ was conducted to find out the carriers of H. Pylori and its eradication rate among a selected population suffering from chronic hepatitis C virus (HCV) infection, which found out that 88.2% of HCV infected patients suffered from H. Pylori. Another study⁷ came across 42.9% of such similar cases which shows significant variation in the magnitude.

The rationale of the study is that the international researches conducted have inconsistent data, and there is no such study conducted locally to establish a relation between H. Pylori and HCV Cirrhosis. Hence, the outcome of the current study will explain the above variation in our selected population and also record the frequency, as a large majority of patients are not diagnosed or remain undiagnosed for H. Pylori among these cases. The results of the study would also be helpful for appropriate management of the morbidity.

Methodology

A total of 200 diagnosed cases of hepatitis C virus suffering from hepatitis C for at least 3 years between 30-80 years of both genders were included in the study, whereas all patients with peptic ulcer, gastric surgery or cancerous growth found in UGIE, recent acute variceal bleeding (within 2 weeks), patients on nitrates, beta blockers, proton pump inhibitors, nonsteroidal anti-inflammatory drugs; patients on antibiotics (up to 1 month) or a prior H. Pylori eradication (on history and medical record) were excluded

from the study. All the cases were enrolled from Medical OPD Services Institute of Medical Science, Lahore. An informed consent of the patients was taken to include their data in the study. A detailed history for hepatitis C virus was taken. Blood samples were collected and sent to the hospital laboratory for evaluation of presence/absence of H. Pylori IgG antibodies by ELISA among HCV infected patients. All the information was recorded on a pre-designed proforma. We used SPSS version for 16.0 for data analysis.

Results

The distribution of age depicted 32%(n=64) were 30-50 years old while 68%(n=136) were 51-80 years old, mean +SD was 53.99 +8.67 years. (Table No. 1) The sample population was divided between 54%

Table 1: Age Distribution (n=200)

Age (years)	Number of patients	%
30-50	64	32
51-80	136	68
Total	200	100
Mean \pm SD	53.99 \pm 8.67	

Table 2: Gender Distribution (n=200)

Gender	No. of patients	%
Male	108	54
Female	92	46
Total	200	100

Table 3: Frequency of Helicobacter Pylori in HCV Infected Patients (n=200)

H. Pylori	No. of patients	%
Yes	75	37.5
No	125	62.5
Total	200	100

(n=108) males and 46%(n=92) females. (Table No. 2) H. Pylori among HCV infected subjects had a frequency of 37.5%(n=75) whereas 62.5%(n=125) had no findings of the morbidity. (Table No. 3)

Discussion

This study was aimed to verify the variation in data of other studies and compare it with the frequency and correlations found in our local selected subjects, as a large majority of patients are not diagnosed or remain undiagnosed for H. Pylori among these cases. The outcome of our study might be helpful to devise an appropriate management of the morbidity.

In this study, frequency of HCV infected patients along with H. Pylori infection was recorded in 37.5% (n=75) whereas 62.5%(n=125) had no findings of the morbidity. A previous study⁶ was conducted to find out the carriers of H. Pylori and its eradication rate among patients with chronic hepatitis C virus (HCV) infection which found out that 88.2% of HCV infected patients suffered from H. Pylori. These findings are higher than our study.

Another study⁷ recorded these findings in 42.9% of the cases which shows significant variation in the magnitude, these findings are in agreement with our study.

Another study by Dore MP and others⁸ included 178 subjects infected with HCV (A and B Child-Pugh's score) in their study. The prevalence of H. Pylori infection was 43%. 14 patients (8%) were currently suffering from a peptic ulcer disease and ulcers were much more widespread among the patients infected (16%), compared to (2%) subjects unaffected by H. Pylori. This gives us the odds ratio of 8. An association of H. Pylori infection with hypertensive gastropathy, or variceal size was not established in this study. Our results are different from the above study and the possible reason may be that compensated liver disease cases were not included.

There is a significant proof regarding the role of H. Pylori in CHC and its development. The histopathological changes are more serious in patients with H. Pylori positive HCV subjects compared to the patients with HCV alone, accordingly to Sakr et al.⁹

Moreover, Umemura et al. proved that the completely treating H. Pylori could increase sustained virological responses in patients with CHC.¹⁰ Also, many studies conducted in vitro established a cytopathic effect of H. Pylori on hepatocytes.¹¹⁻¹² The results we obtained are also in line with the above studies.

Around 50% of the world is infected with H. pylori.¹³⁻¹⁴ There was a significant increase in the number of H. Pylori infected HCV patients with increase in age, while female gender was significantly higher in this study, which is not corresponding to the results of a study by Pellicano et al¹⁵ for gender, while our findings are in agreement with regards to age. Number of H. Pylori patients rise with the increase in age, but it is not the same case in all other populations. Prevalence in US jumps up from less than 20% at 20 years of age, to around 50% at 50 years of age.¹⁶ A similar scenario is in Japan where H. Pylori is less than 20% under 20 years and increases rapidly to 80% and above over the age of 40.¹⁷ Korea is above all countries in the rate of prevalence, that is, 50% at 5 years of age and it peaks to 90% in symptomless adults who are above the 20 years old.¹⁸

Conclusion

There is a greater frequency of H. Pylori among HCV infected subjects, so it should be suggested to all HCV patients to get a test for H. Pylori done as well. Moreover, it is vital that every hospital or clinic should figure out the frequency of this disease.

Conflict of Interest

None

Funding

None

References

1. Sebastiani G, Gkouvatsos K, Pantopoulos K. Chronic hepatitis C and liver fibrosis. *World J Gastroenterol* 2014;20(32):11033-53.
2. El-Masry S, El-Shahat M, Badra G, Aboel-Nour M:

8. Reynolds DL, Garay JR, Deamond SL, Moran MK, Gold W, Styra R. Understanding, compliance and psychological impact of the SARS quarantine experience. *Epidemiol Infect* [Internet]. 2008 Jul [cited 2021 Jan 19];136(7):997–1007.
9. Haleem A, Javaid M, Vaishya R. Effects of COVID-19 pandemic in daily life. *Curr Med Res Pract* [Internet]. 2020 Mar [cited 2021 Jan 19];10(2):78–9.
10. Jordà Ò, Singh SR, Taylor AM. Longer-run Economic Consequences of Pandemics [Internet]. 2020 [cited 2021 Jan 19].
11. Donthu N, Gustafsson A. Effects of COVID-19 on business and research [Internet]. Vol. 117, *Journal of Business Research*. Elsevier Inc.; 2020 [cited 2021 Jan 19]. p. 284–9.
12. Ammar A, Chtourou H, Boukhris O, Trabelsi K, Masmoudi L, Brach M, et al. Covid-19 home confinement negatively impacts social participation and life satisfaction: A worldwide multicenter study. *Int J Environ Res Public Health* [Internet]. 2020 Sep 1 [cited 2021 Jan 19];17(17):1–17.
13. Kumari A, Ranjan P, Vikram NK, Kaur D, Sahu A, Dwivedi SN, et al. A short questionnaire to assess changes in lifestyle-related behaviour during COVID 19 pandemic. *Diabetes Metab Syndr Clin Res Rev* [Internet]. 2020;14(6):1697–701.
14. Consolo U, Bellini P, Bencivenni D, Iani C, Checchi V. Epidemiological aspects and psychological reactions to COVID-19 of dental practitioners in the Northern Italy districts of modena and reggio emilia. *Int J Environ Res Public Health*. 2020;17(10).
15. Balkhi F, Nasir A, Zehra A, Riaz R. Psychological and Behavioral Response to the Coronavirus (COVID-19) Pandemic. *Cureus*. 2020; 12 (December 2019):1–12.
16. Khanal P, Devkota N, Dahal M, Paudel K, Joshi D. Mental health impacts among health workers during COVID-19 in a low resource setting: A cross-sectional survey from Nepal. *Global Health*. 2020;16(1): 1–12.
17. Montenovo L, Jiang.Xuan, Rojas FL, Schmutte IM. Determinants of Disparities in Covid-19 Job Losses. NBER Work Pap No 27132. 2020;1689–99.
18. Altig D, Baker S, Barrero JM, Bloom N, Bunn P, Chen S, et al. Economic uncertainty before and during the COVID-19 pandemic. *J Public Econ* [Internet]. 2020;191:104274.
19. Loopstra R. Vulnerability to food insecurity since the COVID-19 lockdown Preliminary report. *Food Found*. 2020;(April):1–26.
20. Niles MT, Bertmann F, Belarmino EH, Wentworth T, Biehl E, Neff R. The early food insecurity impacts of COVID-19. *medRxiv*. 2020;
21. Wang H, Zhang M, Li R, Zhong O, Johnstone H, Zhou H, et al. Tracking the effects of COVID-19 in rural China over time. *Int J Equity Health*. 2021; 20(1):1–13.
22. Available from: https://www.who.int/images/default-source/wpro/health-topic/covid-19/slide40b0be645e6ee4038b1ea48ff3813dc74.jpg?sfvrsn=a5e5a609_2
23. Ho HY, Chen YL, Yen CF. Different impacts of COVID-19-related information sources on public worry: An online survey through social media. *Internet Interv* [Internet]. 2020; 22(September): 100350.
24. Hassnain S, Omar N. How COVID-19 is Affecting Apprentices. *Biomedica*. 2020;

Authors Contribution

S.H.: Conception and design drafting

A.I.: Data collection and Introduction

M.W.U.: Data collection and analysis

F.A.: Final approval and questionnaire