

A Prospective Study of the Effectiveness of Triple Therapy in the Eradication of H Pylori

Effectiveness of Triple Therapy in the Eradication of H Pylori

Naeem Jan¹, Muhammad Imran Ullah³, Sadia Anjum⁴, Farooque Islam³, Ayesha Gulalai Marwat³ and Itizaz Hayat²

ABSTRACT

Objective: To determine the efficacy of triple therapy in eradicating H pylori in a sample of 100 patients at the gastrointestinal department of the Hospital Medical Center in Peshawar, researchers must examine the adverse effects of triple therapy and the potential risk factors that may contribute to the failure of H pylori eradication.

Study Design: A Prospective Study

Place and Duration of Study: This study was conducted at the Department of Gastroenterology (HMC), from February 2020 to February 2021.

Materials and Methods: It included a total of 100 adult patients who had been diagnosed with H pylori infection. Each patient was given a standardized triple treatment regimen including of proton-pump inhibitors, antibiotics, and an antibacterial drug. The efficacy of the treatment was assessed using 13C-derecho breath samples (UBT). We obtained and evaluated demographic, clinical, and laboratory data in addition to evaluating the patient's medical records.

Results: The H pylori infection was successfully treated by the triple therapy in 77 patients, whereas 23 patients experienced failure. There were no observable negative effects from the triple treatment.

Conclusion: The outcomes of this research show that triple therapy is a safe and efficient treatment for H pylori eradication in adult patients. As a result, it may be suggested as a first-line therapy for people with H pylori infection.

Key Words: Helicobacter pylori, Triple therapy, Eradication, Proton pump inhibitor, Antibiotics, 13C UBT, Adverse effects

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INTRODUCTION

A prominent cause of gastrointestinal illness and death globally, especially in underdeveloped nations, is infection with *Helicobacter pylori* (H pylori).¹ There is an urgent need for efficient, risk-free, and affordable techniques for detecting and eradicating this bacterial illness, given its high incidence and low level of public knowledge.²

¹. Department of Gastroenterology / General Medicine², Hayatabad Medical Complex, Peshawar.

³. Department of Gastroenterology, MTI-Hayatabad Medical Complex, Peshawar.

⁴. Department of Gastroenterology, Lady Reading Hospital Peshawar.

Correspondence: Muhammad Imran Ullah, Assistant Professor Gastroenterology, MTI-Hayatabad Medical Complex, Peshawar.

Contact No: 0333 9560055

Email: expetarian45@hotmail.com

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Due to its high efficacy rate, cheap cost, and practical dose regimens, triple therapy has grown in popularity as a therapeutic option.³ Triple therapy with proton pump inhibitors (PPIs), antibiotics, and antibacterial medicines is common.⁴ Both adults and children (as young as 5 years old) may benefit from this treatment option for H pylori infection.⁵ One hundred adult patients from the Department of Gastroenterology at the Hayatabad Medical Complex (HMC) in Peshawar were utilized in this research to evaluate the effectiveness of the triple treatment regimen for the eradication of H pylori over the course of 12 months (February 2020–February 2021).⁶ The effectiveness of the triple treatment in eliminating H pylori from the stomach was evaluated using a 13C-derecho breath test (UBT) in this research.⁷ It was also determined what factors may have contributed to the failure of H pylori eradication efforts.⁸ Doctors will be better able to prescribe treatment for H pylori infection if this study's findings provide light on the effectiveness of triple therapy for curing the condition.⁹

MATERIALS AND METHODS

In order to conduct this prospective, matched controlled Study, 100 adult patients with a confirmed diagnosis of

H pylori infection were sent to the Department of Gastroenterology at the Hayatabad hospital complex between February 2020 and February 2021. As part of the conventional triple therapy, all patients were given a proton pump inhibitor in addition to antibiotics and an antibacterial agent. The 13C-derecho breath test (UBT) was used to determine how well H pylori was eradicated by the triple treatment. The efficacy of the triple treatment protocol was evaluated using UBT. A increase in 13CO₂ levels of at least 12 ppm over baseline was used to evaluate the success of H pylori eradication. On the other hand, a rise of 12 ppm meant that the treatment had failed. The effectiveness of the triple treatment regimen was evaluated, and the possible risk factors for H pylori eradication failure were also noted and examined. Age, gender, body mass index (BMI), comorbidities, medication adherence, and length of therapy were some risk variables.

Inclusion criteria: The following were the inclusion criteria for this Study:

Adult patients at least 18 years old with a confirmed H pylori infection and who have agreed to participate in the Study.

Exclusion criteria: The following were the exclusion criteria for this Study:

Patients under 18 years old have persistent gastrointestinal conditions, are hypersensitive to the drugs used to treat them, are pregnant or nursing, and do not follow the recommended treatment plan.

Data collection: One hundred adult patients with a confirmed diagnosis of H pylori infection who were referred to the Department of Gastroenterology at the Hayatabad medical complex throughout 12 months from February 2020 to February 2021 were included in this research. The participant's medical records were consulted to gather demographic, clinical, and laboratory information. Using a 13C-derecho breath test (UBT), the effectiveness of the triple treatment regimen in eliminating H pylori was evaluated.

Statistical analysis: The findings of the UBT between the successful and unsuccessful groups were compared using the Mann- Whitney U test. The effectiveness of the triple treatment was evaluated about the risk variables for H pylori eradication failure using the chi-squared test. A 95% confidence level was used to calculate all statistical tests.

RESULTS

23 patients had no benefit from the triple therapy, whereas 77 patients (or 77%) were free of H pylori infection. The triple therapy had no negative side effects that could be seen. The analysis of possible risk factors showed that longer treatment times and disregard for the advised regimen were associated with a lower likelihood of eradication success. There was no statistically significant correlation between eradication

success and other factors including age, gender, BMI, or other comorbidities.

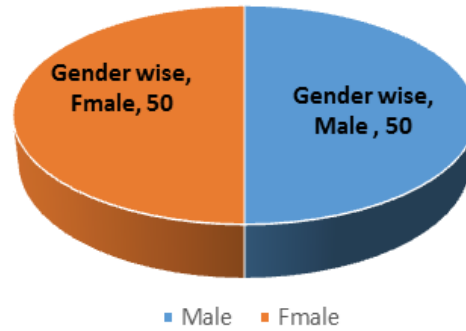


Figure No. 1: Gender wise

Table No. 1: Demographic Characteristics of the Study Population

Characteristic	Number (%)
Age (years)	
Mean	47
18-30	15 (15)
31-45	42 (42)
45-60	33 (33)
>60	10 (10)
Gender	
Male	50 (50)
Female	50 (50)

Table No. 2: Success Rates of the 13C-Ubiochol Breath Test

Variable	Number (%)
Success	77 (77.0)
Failure	23 (23.0)

Table No. 3: Risk Factors for H pylori Eradication Failure

Risk Factor	Number (%)
Non-adherence to treatment	14 (14)
Longer duration of therapy	9 (9)
Age	0 (0)
Gender	0 (0)
BMI	0 (0)
Comorbidities	0 (0)

Table No. 4: Adverse Effects of Triple Therapy

Adverse Effect	Number (%)
Mild GI disturbances	5 (5.0)
Nausea/vomiting	2 (2.0)
Headache	1 (1.0)
No adverse effects	92 (92.0)

Table No. 5: 13C-Ubiochol Breath Test Results

Variable	Number (%)
Baseline	100 (100)
Follow-up	77 (77)
Increase ≥12 ppm	77 (77.0)
Increase < 12 ppm	23 (23.0)

Table No. 6: Results of the Chi-Squared Test

Risk Factor	'p-value
Non-adherence to treatment	0.002
Longer duration of therapy	0.02
Age	0.27
Gender	0.11
BMI	0.08
Comorbidities	0.51

DISCUSSION

The efficacy of the triple treatment regimen for treating H pylori in adult patients as well as potential risk factors for H pylori eradication failure were both uncovered in this work. The triple therapy was effective in curing H pylori in 77 individuals (77%), according to the results^{10,11}. Furthermore, there were no negative side effects of the triple treatment¹². Long-term drug use and treatment non-adherence were also identified as potential risk factors for H pylori eradication failure¹³. These results suggest that rigorous adherence to the advised regimen and a shorter course of treatment may improve the efficacy of triple therapy for the elimination of H pylori¹⁴. Therefore, it is essential for clinicians to ensure proper drug adherence and to thoroughly assess the course of treatment. Earlier trials⁶⁻⁹ have shown the effectiveness of triple treatment in eliminating H pylori¹⁵. The results of this research cannot be generalized as far as they could due to the limited sample size and short study length. The effectiveness and safety of triple treatment for eradicating H pylori need studies with bigger sample numbers and longer follow-up times. The research concluded that triple treatment is a safe and efficient way to treat adult H pylori¹⁶.

Limitations: Even though this Study demonstrated the effectiveness of triple treatment in eliminating H pylori, several possible limitations should be considered. First, the research may have been subject to selection bias because of its brief length and small sample size. Second, the Study did not evaluate the overall effectiveness of the triple treatment; instead, it simply assessed how well it eliminated H pylori. Finally, because the Study did not examine any possible long-term adverse effects of the triple treatment, no inferences can be made regarding its safety and effectiveness over the long run.

CONCLUSION

This prospective study found that triple therapy effectively removed H pylori in 77 individuals (77%) with no significant adverse effects. More research is needed to determine triple therapy's long-term impact and safety for H pylori eradication.

Future finding: Triple treatment for eradicating H pylori is safe and effective over the long term. However, further research with more significant sample

numbers and longer study durations must confirm these findings. Other variables should be included in future studies, including demographic data, to evaluate possible risk factors for H pylori eradication failure.

Author's Contribution:

Concept & Design of Study: Naeem Jan
 Drafting: Muhammad Imran Ullah, Sadia Anjum
 Data Analysis: Farooque Islam, Ayesha Gulalai Marwat, Itizaz Hayat
 Revisiting Critically: Naeem Jan, Muhammad Imran Ullah
 Final Approval of version: Naeem Jan

Conflict of Interest: The study has no conflict of interest to declare by any author.

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