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Incidence of *Helicobacter pylori* among staff and students within Ramat Polytechnic, Maiduguri

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Abstract: *The aim of this research was to determine the incidence of H. pylori among staff and students within Ramat Polytechnic, Maiduguri. H. pylori is one of the causative agents of pelvic ulcer as well as duodenal ulcer, it is in most cases asymptomatic for a while. Therefore, with the advent of H. pylori serological test, it is operative to diagnose people with or without symptoms of duodenal and gastric ulcer. From the result obtained, sex is one of the parameters followed in the sample collection indicating that out of the total of 50 samples 29 are male while 21 are female, out of the 29 males, 26 are positive (89.7%) while 3(10.3%) are negative. On the other hand, out of the 21 females, 19(90.5) are positive while 2 (9.5) are negative. Similarly, age distributions among the patient were taken from the range of 18-39 and 40-60. High rates of H. pylori incidence are observed in the age range of 18-39 respectively with 90.9% positive and 9.10% negative. The incidence in the age range between 40 – 60 years of age showed 82.4% positive and 17.60% negative with a total percentage of 12 and 88 percent negative and positive respectively.*

Keywords*: H. Pylori, Ulcer, Duodenal and Gastric.*

INTRODUCTION

Helicobacter pylori (*H. pylori*) is a gram-negative bacterium that lives and proliferates in the gastric mucosa (Kornerup *et al*, 2022). *H. pylori*, is now renowned as the etiologic agent of peptic ulcer (Chiang et al, 2022). *H. pylori infects* - 80% of individuals in developing countries but is fast diminishing with economic improvement while 50% of the global population are carriers (Sathianarayanan *et al*, 2022). It has been indicated that largely cases of active gastritis, intestinal metaplasia, dysplasia, and atrophic gastritis are linked with *H. pylori* infection. The bacterium generates the enzyme urease which exchanges urea for carbondioxide and ammonia. The ammonium enables it to defend against the acidic setting in the stomach (Ford & Moayyedi, 2022). enhanced hygiene and sanitation have abridged the spread of *H. pylori* and lowered the

prevalence of infectivity in the younger generations. *H. pylorus is* now alleged to be one of the most vital causes in the pathogenesis of upper gastrointestinal disease. Eradication of *H. pylori* would have insightful consequences for the management of many gastroduodenal disorders. *H. pylori* infection primarily happens at some stage in early childhood, particularly in developing countries (Ford. & Moayyedi, 2022).

The occurrence of any condition in a community is interrelated to three factors firstly, the atypical acquisition of the state that is the incidence, secondly, the pace of loss of the circumstance, and thirdly the interval of the condition flanked by acquisition and loss, as a result, the occurrence of *H. pylori* infection is characterized by perceptible environmental and time disparity. Variation in the occurrence of *H. pylori* is subjugated by differences between communities in the incidence of *H pylori* throughout childhood (Parsonnet *et al*., 1994), The most remarkable attribute of *H. pylori* at the same time as a human bacterial pathogen is its usually ability to establishes a chronic infection in gastro duodenal mucosa which persevere for several years. Impulsive annihilation of *H. pylori* infection seems to be uncommon. This is a most unusual circumstance for a human bacterial pathogen, exhibiting an association not unlike that of adapted parasite or else a symbiont that persists in its host. Once infected, few people impulsively lose *H. pylori*, as a result, the occurrence of *H. pylori* infection in a society tends to increase with age.

In contemporary medicine, we are responsive to a series of an example where infections turn out to be uncontrollable when immunodeficiency develops. *H. pylori* infection has not been described in patients with granulocytosis or chronic granulomatous disorders however, these patients are often given large quantities of antibiotics that can suppress or eliminate the bacterium. *H. pylori* infection is not a problem in patients with acquired immune deficiency syndrome. *H. pylori* have not been reported to be a problem in patients with late-onset gamma globuliaemia, but these patients have a high frequency of atrophy of gastric cancer (IARC, 1994). It is likely that these patients, without antibody protection develop a fulminating *H. pylori* infection that causes such profound damage to the gastric mucosa that the bacterium's specialized niche is lost by the time of presentation and *H. pylori* cannot be detected.

The advancement of atrophic gastritis may be the accustomed mechanism by which the host loses infection with *H. pylori* (Tada *et al.,* 1993). In contemporary settings, treatment with antibiotics can result in the successful eradication of *H. pylori* disease. Most solitary antibiotic treatment has a very little success rate in annihilation however; monotherapy with a large dosage of amoxicillin for 2-4 weeks has confirmed a 23% eradication rate (Chiba *et al*, 1992). Numerous patients now receive a combination of antibiotic regimens that must result in the eradication of *H. pylori* disease thus, resolution or loss of infection occurs in the community, but this is unusual in childhood and early adult life.

Kornerup *et al*, 2022, conducted cohort studies on the relationship between *H. pylori* and cancer (hepatobiliary cancers), A higher occurrence of gastric cancer *in H. pylori-positive* persons was established, however, the incidence of hepatobiliary cancers was amazingly lower in *H. pylori-infected* persons (IARC, 1994).

METHODOLOGY

SAMPLE COLLECTION

The sample was collected at Ramat Polytechnic Maiduguri among staff & students. The samples were carefully collected according to the standard method of blood collection by Monica Cheesebrough (2006).

The desired number of test units from the ten (10) test cards was removed by bending and tearing at the perforation.

- The protective foil covers were removed from each test.
- 5ml of the serum sample (using a precision pipette) was applied to the sample pad (marked by the arrow symbol).
- And waited until the serum is absorbed into the sample pad, then one drop of chase buffer was applied to the sample pad and waited for 15minute and the result was read.

RESULT AND DISCUSSION

TABULATION OF RESULT

Table 1: shows the distribution of *H. pylori* incidence by sex

SEX	FREQUENCY	POSITIVE	NEGATIVE	% (-)	% (+)
MALE	29	26	3	10.3	89.7
FEMALE	21	19	2	9.5	90.5
TOTAL	50	45	5	10	90

Table 2: Shows the distribution of *H. pylori* incidence by age

AGE	FREQUENCY	POSITIVE	NEGATIVE	%(-)	% (+)
18 – 39	33	30	3	9.10	90.9
40 – 60	17	14	3	17.60	82.4
TOTAL	50	44	6	12	88

DISCUSSION OF THE RESULT

From the result obtained, sex is one of the parameters followed in the sample collection indicating that out of the total of 50 samples 29 are male while 21 are female, out of the 29 males, 26 are positive (89.7%) while 3(10.3%) are negative. On the other hand, out of the 21 females, 19(90.5) are positive while 2 (9.5) are negative. Similarly, age distributions among the patient were taken from the range of 18-39 and 40-60. A high rate of *H. pylori* incidence is observed in the age range of 18-39 respectively with 90.9% positive and 9.10% negative. The incidence in the age range between 40 – 60 years of age showed 82.4% positive and 17.60% negative with a total percentage of 12 and 88 percent negative and positive respectively.

However, most of the patients are asymptomatic and according to the manufacturers, it is said that until when the bacteria (*H. pylori*) started to colonized the intestine or duodenum before it can be detected. Though the patients are asymptomatic, but signs and symptoms will manifest in a very short time. However most infected people 70%) are asymptomatic. This confirms the present research conducted in Ramat Polytechnic Clinic Maiduguri.
Analysis of the incidence of H pylori among patients attending Ramat Polytechnic Clinic Maiduguri was carried out. The method adopted was the serological determination of H pylori which involves the use of strips enhanced by the use of a buffer. The strip contains the test and control which indicate whether a patient is positive or negative

Since H pylori inhabit the duodenal and gastric mucosa they produce an enzyme urease which converts urea into carbon dioxide and ammonia, to avoid being killed by the acidic nature of the stomach. It is, therefore, recommended that adequate food should be taken at an appropriate time to avoid the colonization of the intestine and duodenum by H pylori. People should visit the physician for medical check-ups and advice against the bacteria (*H. pylori*) before it becomes chronic which may lead to gastric or duodenal cancer.

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