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Abstract: A study was conducted on the effect of *Nigella Sativa* (Black Seed) and pure honey on *Helicobacter Pylori* infection. 35 patients (17 males and 18 females) were drawn from Jalingo Specialist Hospital, Federal Medical Centre and Ummah clinic Jalingo for the study. An epidemiological form was first administered on each patients as criteria for selection of study subjects. The patients were screened for *H. Pylori*, using *H. Pylori* antibody test. Patients who were positive for *H. pylori* were given 2-3 bottles of Black seed / Honey mixture to be taken 2 tea spoonful morning and evening for 2-4 weeks. *H. pylori* test was conducted the second time 4-6 weeks after the treatment. The results had indicated that *Nigella Sativa* (Black Seeds) and pure honey had an anti *H. pylori* activity. It had also indicated a successful elimination of *H. pylori* infection by 86.2%.

Key Words: *Nigella Sativa*, *Helicobacter pylori*, anti *H. Pylori* activity, successful elimination.

Introduction

Background to the study

Peptic Ulcer Diseases (PUD) are disorders characterized by recurrent burning sensation and gastric pain that can be accompanied by bleeding into the gastrointestinal tract. *Helicobacter pylori* can damage the tissue in your stomach and the first part of your small intestine (the duodenum). This can cause redness and sourness (inflammation). In some cases, it can also cause painful sores called peptic in your upper digestive tract (John Hopkins, 2023).

The fact that there is definitive association between *Helicobacter pylori* and peptic ulcer diseases that peptic ulcers usually do not develop without infection. Elimination of *H. pylori* from the stomach or duodenum ushers in a significant reduction in the rate of ulcer relapse. This provides strong evidence that *H. pylori* is the etiological agent of most gastric and peptic ulcers (William, 2004).

Helicobacter pylori is a microaerophilic, urease-positive, curved Gram-negative rod with a tuft of polar flagella. Humans are the major reservoir of infection for *H. pylori*, and transmission occurs by fecal-oral or oral-oral routes. The organism attach itself to gastric mucosa and produces urease which gives large quantity of ammonia that tend to neutralizes the acidity of the stomach and allows *H. pylori* to multiply in an acidic environment that is lethal for many bacteria. Ammonia production is also inflammatory for gastric mucosa, and this inflammation can lead to ulceration of the intestinal wall or perforation of the stomach (Bernstein Suzan, 2022).

Black seeds (*Nigella sativa*) is an annual flowering plant which grows up to 20-90 cm tall, with finely divided leaves, the leaf segments narrowly linear to threadlike. The fruit is a large and inflated capsule composed of 3-7 united follicles, each containing numerous seeds (Goreja WG, 2003). The seeds contain a fatty oil rich in unsaturated and small amount of saturated fatty acids. The unsaturated fatty acids comprise of linoleic acid (omega-6) (57.9%) and oleic acids (23.7%) while the saturated fatty acids contain palmitic acid (13.7%) and stearic acid (2.6%). The seeds also contain 15 amino acids, including 8 essential amino acids required for a healthy diet (Nickavar B et al, 2003).

The seeds also possess many distinct pharmacological actions such as analgesic, antibacterial, anti-inflammatory, anti-cholinergic, anti-fungal, anti-hypertensive, anti-oxidant, antiviral, anti-diabetic, insulin sensitizing,

interferon inducer and in vitro anti-*Helicobacter* activity. It also had the ability to boost the body's immune system (Bakathir HA, Abbas NA, 2011).

Honey is a sweet liquid made by bees (*Apis mellifera*) using nectar from flowers. Bees first convert the nectar into honey by a process of (regurgitation and evaporation), and then store it as a primary food source in wax honey combs inside the beehive. Honey can then be harvested from the hives for human consumption.

Honey contain monosaccharide, fructose and glucose (70-80%), minerals and water (20%). Honey possesses antiseptic, antibacterial and antioxidant properties, and serves as source of vitamins and minerals (vitamin c and iron). Modern science had found evidence to support many of the historical uses of honey. A review in 2015 had found that honey can help to heal burns. Another study in 2017 had found that the defensin-1 protein in honey promote wound healing (Juraj Majtan, et al, 2017).

Statement of Problem

H. pylori is a successful pathogen that can persist in the stomach of an infected person through life time. It is known that diseases associated with *H. pylori* infection can be avoided if the infection by the bacteria can be prevented or eradicated. Currently, numerous antibiotics-based therapies are available. They, however have inherent problems, including the appearance of resistance and associated adverse effects, the risk of re-infection and the high cost of antibiotic therapy.

Justification

A large number of diseases are ascribed to *Helicobacter pylori*, particularly chronic active gastritis, peptic ulcer disease and gastric cancer. Successful treatment of *H. pylori* infection with antimicrobial agents can lead to regression of *H. pylori* associated disorders. The current treatment that is very effective is the triple therapy using Amoxicillin, Clarithromycin and Omeprazole. It is very expensive (a dose for 30 days can be up to N20, 000. 00). Antibiotic resistance against *H. pylori* is increasing, and it is necessary to find effective alternative agents.

Research Questions

1. Are there alternative, affordable, accessible and effective treatment against *Helicobacter pylori* infection?

- Does a mixture of Nigella Sativa (Black Seeds) and pure honey has any clinical activity on H. pylori infection?

Research Objectives

- To find an alternative, affordable, accessible and effective treatment against Helicobacter pylori infection.
- To evaluate the clinical activity of Black seeds (Nigella sativa) with pure honey in the treatment of Helicobacter pylori infection.

Methodology

A clinical study was conducted on 35 patients from Taraba state Specialist Hospital, Federal Medical Centre, and Ummah clinic Jalingo. Patients with peptic and duodenal ulcer symptoms were screened for H. Pylori, using H. Pylori antibody test. Patients that tested positive for H. pylori antibody test were given two or three bottles of pure honey/black seeds mixture to be taken 1 tea spoonful morning and evening for 2-4 weeks. The H. pylori antibody test was conducted 4-6 weeks after the treatment. Reduction in H. pylori antibody or negative test was an indication of H. pylori eradication. 2 gallons of pure honey, ½ measure of black seed powder (Nigella Sativa), 3 packets of H. Pylori antibody screening kits, 60 clean & sterilized plastic bottles for packaging of pure honey/black seeds mixture were used.

Results

35 people who complained of recurrent burning sensation and pain at the chest, gastric, the upper and lower back region were screened for H. pylori, using H. pylori Kaytec Rapid Diagnostic Test Kit (H. pylori antibody test cassette; Lot: 20220330, Exp: 20250329). 6 people (17%) were males while 29 (83% were females).

Table I: Distribution of the respondents by Age intervals.

S/No	Age (Years)	Frequency
1	15-24	5
2	25-34	8
3	35-44	8
4	45-54	9
5	55-above	5

Table II: Distribution by Educational status

S/No	Educational status	Frequency
1	No basic Education	6
2	Primary Education	3
3	Secondary Education	10
4	Tertiary Education	16

Table III: Distribution by marital status

S/No	Marital status	Frequency
1	Single	5
2	Married	17
3	Divorced	4
4	Widowed	9

Table IV: Distribution by Occupation

S/No	Occupational Status	Frequency
1	Farming	3
2	Trading	6
3	Civil Servant	14
4	Handworks	5
5	Others	7

Table V: Percentage of Respondents using N. Sativa/Honey

S/No	Using N. Sativa/Honey	Frequency
1	Yes	9
2	No	26

Table VII: Using N. Sativa / Honey

S/No	Effect of N. Sativa / Honey	Frequency
1	No Improvement	2
2	Significant Improvement	7

33 people (94.29%) were positive (5 males, 28 females) while 2 were negative (1 male, 1 female) after the initial screening.

Results after using Nigella Sativa and Honey

Total number screened were 29 (3 males, 26 females). 25 people (86.21%) (2 males, 23 females) were negative while 4(13.8%) (1 male, 3 females) remained positive. 4 people were absent and could not be traced.

Discussion

The findings of this study as deduced from the analysis are presented below and discussed fully. The study was designed to find an alternative, affordable, accessible and effective treatment against Helicobacter pylori infection, and to evaluate the clinical activity of Black seeds (Nigella sativa) with pure honey in the treatment of Helicobacter pylori infection.

35 people screened for H. pylori who received 2-3 bottles (200mls) of black seeds/honey mixture were asked to return for a repeated H. pylori antibody screening after 4-6 weeks. 29 out of 33 people returned for the second H. pylori screening. The result of the second test indicated 25 people to be negative while only 4 remained positive. This results not only indicated that Nigella Sativa (Black Seeds) had an anti H. pylori activity but had also indicated a successful elimination of H. pylori infection by 86.2%.

Another major finding is that few individuals (25.7%) were aware of black seeds or honey as medicinal substances for treatment of H. pylori infection or were using it as indicated by the respondents on epidemiological form (Table VII).

Conclusion

This study concluded that Black Seeds (Nigella Sativa) mixed with pure honey had anti Helicobacter pylori activity. The mixture is also capable of eliminating H. pylori infection by 86.2%. The study also discovered that there was low awareness on the usefulness of N. sativa and pure honey mixture in the management of H. pylori infection.

Recommendations

- People should always try to go for diagnosis for whatever diseases they are suffering from rather than self-medication.
- All patients suffering from Helicobacter pylori infection should establish the right diagnosis through laboratory test.
- All patients who are diagnosed positive for H. pylori infection should try using a mixture of black seeds with pure honey; a spoonful early in the morning before meal and another after all meals

before bed time. This mixture should be taking for 3-4 weeks to ensure its effectiveness.

4. There should be precautions to ensure that the honey use in making this mixture does not contain sugar or any other sugary substances mixed with the honey.
5. I wish to recommend for further study to compare the effectiveness of N. Sativa/honey mixture against the current triple therapy treatment of H. pylori infection.

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