

# International Journal of Gynaecology Research



ISSN Print: 2664-892X  
ISSN Online: 2664-8938  
IJGR 2024; 6(1): 26-31  
[www.gynecologyjournal.net](http://www.gynecologyjournal.net)  
Received: 08-08-2024  
Accepted: 08-09-2024

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## Association between hyperemesis Gravidarum in first trimester pregnancy and *H. pylori*

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**DOI:** <https://doi.org/10.33545/2664892X.2024.v6.i1a.21>

### Abstract

Hyperemesis gravidarum affects 0.3-1.5% of pregnancies. Psychological, physiological, and anatomical factors can cause hyperemesis gravidarum. Helicobacter pylori may cause hyperemesis gravidarum. Pregnancy may prolong gastric emptying dysmotility and intestinal transit time, favoring *H. pylori* infection. This study aimed to find the association between hyperemesis gravidarum in 1st trimester pregnancy and *H. pylori*. In this case-control study, 50 pregnant women with hyperemesis gravidarum and 50 healthy pregnant women were studied at Tikrit Teaching Hospital in Iraq from October 1, 2023, to June 30, 2024. The commonest age group in cases group was 20-29 years 19 (38%), and  $\geq 30$  years 18(36%). Positive *H. pylori* IgG found among 39 (39%) of the pregnant women. Positive *H. pylori* IgG found significantly higher among cases 29 (58%) than control group 10(20%). Serum *H. pylori* IgM found among 32(64%) of the cases and 12(24%) of the controls. High serum Na level found among 5(10%) of the cases and 5(10%) of the controls, low serum Na level found among 18(36%) of the cases and 4(8%) of the controls, this relation was statistically significant. High serum K level found among 0(0%) of the cases and 2(4%) of the controls, low serum K level found among 15(30%) of the cases and 1(2%) of the controls, this relation was statistically significant. The hemoglobin level of 7-9 found among 7(14%) of the cases and 4(8%) of the controls, the level of 10-11 g/dl found among 20(40%) of the cases and 15(30%) of the controls.

**Keywords:** *H. pylori* and hyperemesis gravidarum, first trimester pregnancy and *H. pylori*

### Introduction

Hyperemesis gravidarum (HG) refers to intractable, severe nausea and vomiting of pregnancy<sup>[1]</sup>. Even though approximately 70%, or up to 91%, of pregnant women experience nausea and vomiting to some degree during the first trimester of pregnancy, HG is a relatively rare condition with an incidence between 0.3% and 3.6%, or even up to 10.8% of all pregnancies<sup>[2]</sup>. It leads to weight loss, nutrients deficiency, dehydration, ketonuria, electrolytes and acid-base imbalance. The common complications of untreated HEG are Wernicke's encephalopathy, coagulopathy, depression, longer hospital stay and poor pregnancy outcomes like preterm labour, small for gestational age, fetal mal-development and fetal congenital anomalies<sup>[3]</sup>. The exact etiology of hyperemesis gravidarum is mostly unknown; however, some explanations exist such as hormonal changes, changes in gastrointestinal tract and genetic factors, in addition to other risk factors such as increasing placental mass for molar pregnancy or multiple pregnancies, pre-conceptual ingestion of oestrogen containing medications, motion disorders, history of migraine and positive family history of HG. Helicobacter pylori (*H. pylori*) infection is considered to affect about half of the population all over the world, mainly affecting population living in developing countries<sup>[4]</sup>.

Helicobacter pylorus is a bacterium that colonizes the stomach early during childhood. *H. pylori* infection is the common risk factor for developing peptic ulcers and future gastric cancer. It is prevalent among pregnant women, and the prevalence rates of this infection during pregnancy are different depending on many factors like geography and socioeconomic status, in addition, to differences in techniques used to diagnose<sup>[5]</sup>. The aim of this study is to find the association between hyperemesis gravidarum in 1st trimester pregnancy and *H. pylori*.

## Materials

In this case-control study, 50 pregnant women with hyperemesis gravidarum and 50 healthy pregnant women were studied at Tikrit Teaching Hospital in Iraq from October 1, 2023, to June 30, 2024. Inclusion criteria were pregnant women admitted to Tikrit Teaching Hospital in Tikrit city between 5-15 weeks of pregnancy with hyperemesis gravidarum symptoms, while the control group was 50 pregnant women of the same gestational age without HG. Pregnant women with thyroid disorders, multiple pregnancies, gestational Trophoblastic Disorders, Hepatobiliary Disorders, gastric or intestinal diseases are excluded. Women declined study participation are excluded also.

Data collected by direct interview with the pregnant women, taking information about sociodemographic variables, obstetrical history, medical history, and severity of the nausea and vomiting. Careful general clinical examination, abdominal examination, and ultrasonography was done. A sample of 5 ml blood was drawn from each woman for serum electrolytes and immunoglobulin G antibody tests for *H. pylori*. Verbal and written informed consent was obtained individually from all participants after clearly explaining the purpose of the study and the type of data required, and respondents were assured of data confidentiality and privacy.

## Results

The commonest age group among cases group was 20-29 years 19(38%), and  $\geq 30$  years 18(36%), in comparison to control group the commonest age group was 20-29 years 20(40%), and  $\geq 30$  years 19(38%). The commonest educational level among cases group was college 22(44%) and among control group was 2ndry school 19(38%). Most of the cases group and control group was housewives 31(62%), 35(70%) respectively. The above relations were statistically not significant (P-Value  $> 0.05$ ) as shown in Table 1.

Most of the cases and controls had 2-4 gravidity 21 (42%) and 20(40%) respectively. Most of the cases and controls was Nulliparous 18(36%) and 18(36%) respectively. Surgical history found among 5(10%) of the cases and 1(2%) of the controls. Medical history found among 1(2%) of the cases and 1(2%) of the controls. Diabetes mellitus found among 1 (2%) of the cases and 0(0%) of the controls. hypertension found among 0(0%) of the cases and 1(2%) of the controls. the commonest gestational age group was 11-15 week was 43(86%) among cases in comparison to controls 42 (84%) among controls. The above relations were statistically not significant (P-Value  $> 0.05$ ) as shown in Table 2. Positive *H. pylori* IgG found among 39 (39%) of the pregnant women as found in figure 1. Positive *H. pylori* IgG found among 29 (58%) of the pregnant women with hype remiss gravidarum (cases) in comparison to 10(20%) of the control group, this relation was statistically significant (P-Value  $< 0.05$ ), as shown in figure 2.

Serum *H. pylori* IgM found among 32(64%) of the cases and 12(24%) of the controls. High serum Na level found among 5(10%) of the cases and 5(10%) of the controls, low serum Na level found among 18(36%) of the cases and 4(8%) of the controls. High serum K level found among 0(0%) of the cases and 2(4%) of the controls, low serum K level found among 15(30%) of the cases and 1(2%) of the controls. The HB level of 7-9 found among 7(14%) of the

cases and 4(8%) of the controls, the level of 10-11 g/dl found among 20(40%) of the cases and 15(30%) of the controls. The above relations were statistically not significant (P-Value  $> 0.05$ ) as shown in Table 3.

The proportion of *H. pylori* infection was significantly higher among cases than the control in all age groups,  $< 20$  years 7(53.8%), 4(36.4%), respectively, age group 20-29 years, 12(63.2%), 3(15%), respectively, in age group  $> 30$  years 10(55.6%), 3(15%), respectively (P-Value  $< 0.05$ ), as shown in Table 4. The proportion of *H. pylori* infection was non significantly higher among cases than the control in gestational age group 6-10 weeks 4(57.14%), 2(25%). The proportion of *H. pylori* infection was significantly higher among cases than the control in gestational age group 11-15 weeks 25(58.1%), 8(19.05%). The above relations were statistically not significant (P-Value  $> 0.05$ ) as shown in Table 5. The proportion of *H. pylori* infection was significantly higher among cases than the control in nulliparous women 10(55.6%), 4(22.2%), respectively, and those with 3-4 parity 7(36.8%), 1(8.3%), (P-Value  $< 0.05$ ), as shown in Table 6.

## Discussion

The commonest age group among cases group was 20-29 years (38%), and  $\geq 30$  years (36%), in comparison to control group the commonest age group was 20-29 years (40%), and  $\geq 30$  years (38%). This goes with Agmon N<sup>[6]</sup> in 2019 found that HG patient commonly in age group 18-25 years was (47.2%), those aged 25-35 years (46.1%), those aged  $>35$  years (6.7%), and this not different from the control group. Asrade L *et al.*<sup>[7]</sup> in 2023 found that the commonest age group was 25-30 years for HG (38.5%), followed by 30-35 years (28.4%). Most of the cases and controls had 2-4 gravidity 21(42%) and 20 (40%) respectively this difference was not significant (P-Value  $> 0.05$ ). this goes with Mohammed DF [8] found in 2021 that 56% of HG women was multigravida. While Asrade L *et al.*<sup>[7]</sup> in 2023 found that most of those with HEG (73.6%) and without HEG (93.6%) were multigravida, while one-fourth of cases were primigravida. Most of the cases and controls was Nulliparous 18(36%) and 18(36%) respectively, this difference was not significant (P-Value  $> 0.05$ ). This differ with Asrade L *et al.*<sup>[7]</sup> In 2023 found that nearly 40% of cases and more than half (55.7%) of controls were multiparas.

The commonest gestational age group was 11-15 week was 43(86%) among cases in comparison to controls 42 (84%) among controls was not significant (P-Value  $> 0.05$ ). This could be explained by the body's reaction to the pregnancy hormone, especially human chorionic gonadotropin, which is produced in higher amounts in the first and second trimesters than in the third trimester. The other explanation could be woman's subconscious mind's attempt to reject pregnancy in the early trimester that is adapted later in the third trimester<sup>[9]</sup>. Positive *H. pylori* IgG found among 39 (39%) of the pregnant women. Positive *H. pylori* IgG found among 29 (58%) of the pregnant women with hype remiss gravidarum (cases) in comparison to 10(20%) of the control group. This goes with previous study in Salahdeen governorate done by Mohammed HQ<sup>[10]</sup> who found that the IgG is significantly detected in 64% of case group and in 40% of control group. Asrade L *et al.*<sup>[7]</sup> In 2023 found that *H. pylori* was positive in 18.9% of cases and 5.7% of the controls.

This matches literature by Elshazly OG found that the mean IgG titer was significantly higher among HG women (47.02 ± 36.51) in than non HG women (24.97 ± 19.58). The same was reported by Tamamy E *et al.* [11] in 2019 found that (86.67%) of cases were positive for HP IgG, versus (33.33%) in the control group. Serum *H. pylori* IgM was significantly higher among cases (64%) of the than controls (24%). This goes with Mohammed DF [8] found in 2021 that 52% of the cases and 24% of the controls had seropositive IgM. The HB level of 7-9 found among 7(14%) of the cases and 4(8%) of the controls, the level of 10-11 g/dl found among 20(40%) of the cases and 15(30%) of the controls, this relation was statically not significant (P-Value > 0.05) as shown in Table 3. this goes with Yisak H *et al.* [12] in 2022 who found the levels of anemia for the *H. pylori* infection-positive pregnant mothers 4 (7.7%) had 7-9g/dL, 12 (23.1%) 9-11g/dL, 25 (48.1%)<7g/dL, and 11 (21.2%) > =12 g/dL. Abdella Bin Ethiopia [13] in 2018 found significant relation between H pylori infection and anemia among pregnant women.

The probable reason for this study could be due to some possible mechanisms by which *H. pylori* impacts iron metabolism by decreased absorption. *H. pylori* infection developed chronic gastric ulceration; this decreased hydrochloric acid (Ascorbic acid secretion) concentration which increased hepcidin production associated with *H. pylori* gastric ulceration leading to reduced intestinal iron absorption. *H. pylori* can be expected not to survive in acidic gastric conditions produced by acidic citrus fruits. When the uptake of iron by *H. pylori* for growth does not occur, increased availability of iron in lactoferrin in the gastric mucosa and the absorption of iron is not affected. On the contrary, bacterium host competition does not occur for dietary iron supply [14].

The proportion of *H. pylori* infection was significantly higher among cases than the control in all age groups; < 20 years 7(53.8%), 4(36.4%), respectively, age group 20-29 years, 12(63.2%), 3(15%), respectively, in age group >30 years 10(55.6%), 3(15%), respectively. this goes with Asia Ahmed Zghair *et al.* [15] found that frequency of H-Pylori infection was significantly higher in all age groups among cases as compared to control. i.e. 18-25 years: 83.3%, 26-30 years: 78.3%, 31-35 years 73.3% and > 40 years: 100%. The proportion of *H. pylori* infection was non-significantly higher among cases than the control in gestational age group 6-10 weeks 4(57.14%), 2(25%), respectively, this relations were statistically not significant (P-Value > 0.05). The proportion of *H. pylori* infection was significantly higher among cases than the control in gestational age group 11-15 weeks 25(58.1%), 8(19.05%), respectively, this relations were statistically significant (P-Value < 0.05). this goes with Ayub JU *et al.* 2023 [15] found that the prevalence of *H.*

*pylori* among those with HG at gestational age 6-10 week was (75%), and in the gestational age of 11-15 was (83.3%). The proportion of *H. pylori* infection was significantly higher among cases than the control in nulliparous women 10(55.6%), 4(22.2%), respectively, and those with 3-4 parity 7(36.8%), 1(8.3%), (P-Value < 0.05), as shown in Table 6. This goes with Yisak H *et al.* [12] in 2022 who found the *H. pylori* infection-positive pregnant mothers with the highest prevalence of 18 (34.62%) were gravida two, and the least prevalence 8 (15.4%) were gravida one.

a study conducted by Al-Dorri ZR [16] in Addis Ababa 2022 mentioned the infection rates of 30.8% and 34.1% in primigravida and multigravida women, respectively.

The association between *H. pylori* infection and H.G could be brought on by the increased fluid accumulation and displacement of intracellular and extracellular volumes during the early stages of pregnancy as a result of increased steroid hormone, which in turn results in a change in the pH in the gastrointestinal tract. A latent *H. pylori* infection may become active as a result of this shift in acidity [17, 20]. Reduced immunity to the bacteria is another reason for this association since pregnancy is associated with changes in both humoral and cell-mediated immunity. Abnormal gastric emptying, decreased gastrointestinal motility, and hypersensitivity to gastric or duodenal distention in pregnancy all contribute to the predisposition of *H. pylori* to produce nausea and vomiting. Chronic infection has been found in cases of recurrent vomiting during pregnancy that is not responsive to supportive care [18]. According to research, patients are more likely to experience pregnancy complications than those without the condition [19, 21].

**Table 1:** The general characteristics of study groups

General Characteristics		Control		Cases		P-Value
		No.	%	No.	%	
Age	< 20 years	11	22.0%	13	26.0%	> 0.05
	20-29 years	20	40.0%	19	38.0%	
	> 30 years	19	38.0%	18	36.0%	
Mother education	read & write	7	14.0%	3	6.0%	> 0.05
	1ry school	4	8.0%	7	14.0%	
	2ndry school	19	38.0%	18	36.0%	
	college	18	36.0%	22	44.0%	
	High Education	2	4.0%	0	0.0%	
Mother Job	Housewife	35	70.0%	31	62.0%	> 0.05
	Employer	15	30.0%	18	36.0%	
	Student	0	0.0%	1	2.0%	
BMI	18.5 (Underweight)	1	2.0%	0	0.0%	> 0.05
	18.5-24.9 (Normal)	23	46.0%	18	36.0%	
	25-29.9 (Over weight)	16	32.0%	27	54.0%	
	>30 (Obese)	10	20.0%	5	10.0%	
Total		50	100.0%	50	100.0%	

**Table 2:** Distribution of gestational and clinical characteristics according to study groups.

Clinical and obstetrical Characteristics		Control		Cases		P-Value
		No.	%	No.	%	
Gravidity	Primigravida	18	36.0%	17	34.0%	> 0.05
	2-4 Gravida	20	40.0%	21	42.0%	
	> 5 Gravida	12	24.0%	12	24.0%	
Parity	Nulliparous	18	36.0%	18	36.0%	> 0.05
	1-2 para	15	30.0%	19	38.0%	
	3-4 para	12	24.0%	11	22.0%	
	>5 para	5	10.0%	2	4.0%	
Surgical History	Yes	1	2.0%	5	10.0%	> 0.05

	No	49	98.0%	45	90.0%	
Medical history	Yes	1	2.0%	1	2.0%	> 0.05
	No	49	98.0%	49	98.0%	
DM	Yes	0	0.0%	1	2.0%	> 0.05
	No	50	100.0%	49	98.0%	
HT	Yes	1	2.0%	0	0.0%	> 0.05
	No	49	98.0%	50	100.0%	
Asthma	No	50	100.0%	50	100.0%	
Gestational age	6-10 week	8	16%	7	14%	> 0.05
	11-15 week	42	84%	43	86%	
Total		50	100.0%	50	100.0%	

**Table 3:** Distribution of investigation results according to study groups

Investigations		Control		Cases		P-Value
		No.	%	No.	%	
Serum helicobacter pylori IgM	Yes	12	24.0%	32	64.0%	< 0.05
	No	38	76.0%	18	36.0%	
Serum Na <sup>+</sup> level	< 133	4	8.00%	18	36.00%	< 0.05
	133-148	41	82.00%	27	54.00%	
	> 148	5	10.00%	5	10.00%	
Serum K level	< 3.6	1	2.00%	15	30.00%	< 0.05
	3.6-5	47	94.00%	35	70.00%	
	> 5	2	4.00%	0	0.00%	
HB	7-9 g/dl	4	8.0%	7	14.0%	> 0.05
	10-11 g/dl	15	30.0%	20	40.0%	
	> 12 g/dl	31	62.0%	23	46.0%	
Total		50	100.0%	50	100.0%	

**Table 4:** The Relation of *H. pylori* infection and age according to study groups

Age	Serum helicobacter pylori IgG	Control		Cases		P-Value
		No.	%	No.	%	
< 20 years	Yes	4	36.40%	7	53.80%	< 0.05
	No	7	63.60%	6	46.20%	
20-29 years	Yes	3	15.00%	12	63.20%	< 0.05
	No	17	85.00%	7	36.80%	
> 30 years	Yes	3	15.80%	10	55.60%	< 0.05
	No	16	84.20%	8	44.40%	
Total		50	100.00%	50	100.00%	

**Table 5:** The Relation of *H. pylori* infection and gestational age according to study groups

Gestational Age	Serum helicobacter pylori IgG	Control		Cases		P-Value
		No.	%	No.	%	
6-10 week	Yes	2	25%	4	57.14%	> 0.05
	No	6	75%	3	42.86%	
11-15 week	Yes	8	19.05%	25	58.1%	< 0.05
	No	34	80.95%	18	41.9%	
Total		50	100.00%	50	100.00%	

**Table 6:** The Relation of *H. pylori* infection and parity according to study groups

Parity	serum helicobacter pylori IgG	Control		Cases		P-Value
		No.	%	No.	%	
Nulliparous	Yes	4	22.20%	10	55.60%	< 0.05
	No	14	77.80%	8	44.40%	
1-2 para	Yes	5	33.30%	12	63.20%	> 0.05
	No	10	66.70%	7	36.80%	
3-4 para	Yes	1	8.30%	7	63.60%	< 0.05
	No	11	91.70%	4	36.40%	
>5 para	No	5	100.00%	2	100.00%	NA
Total		50	100.00%	50	100.00%	

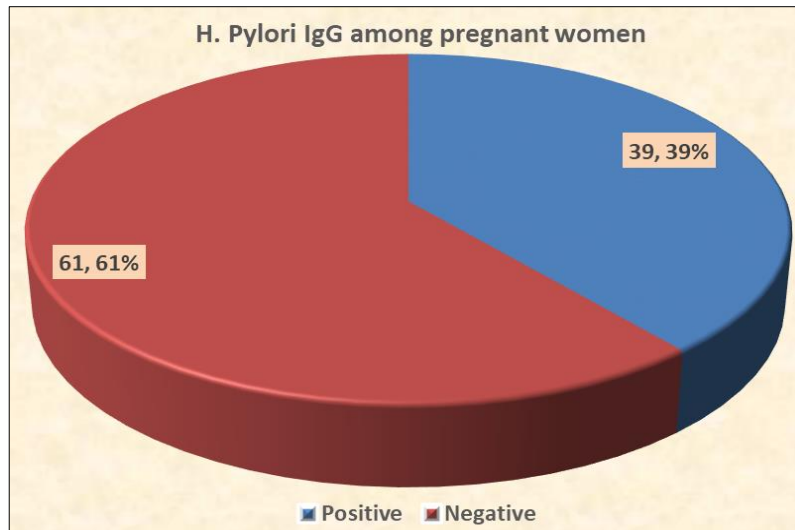


Fig 1: The Proportion of *H. pylori* among pregnant women

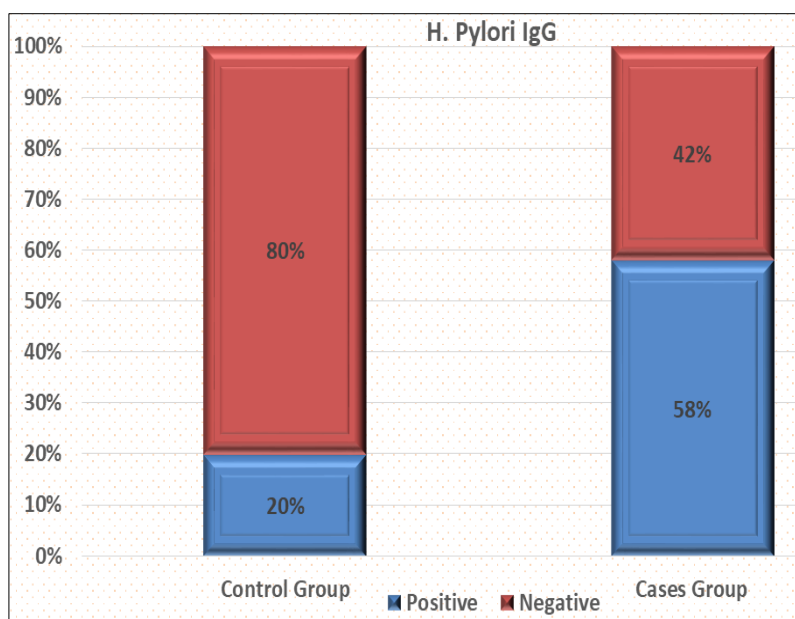


Fig 2: The Proportion of *H. pylori* among study groups

**Conclusion**

The hyperemesis gravidarum is significantly related to *H. pylori* infection. Future research should stress upon identifying the effective therapies for H Pylori eradication that can have a positive impact on the patients with hyperemesis gravidarum and its potential complications.

**Conflict of Interest:** Not available

**Financial Support:** Not available

**References**

1. Koot MH, Boelig RC, Van't Hooft J, *et al.* Variation in hyperemesis gravidarum definition and outcome reporting in randomised clinical trials: A systematic review. *BJOG.* 2018;125:1514-21.
2. Fejzo MS, Trovik J, Grooten IJ. Nausea and vomiting of pregnancy and hyperemesis gravidarum. *Nat Rev Dis Primers.* 2019;5:62.
3. Popa SL, Barsan M, Caziuc A, Pop C, Muresan L, Popa LC, *et al.* Life-threatening complications of hyperemesis gravidarum. *Exp Ther Med.* 2021;21(6):1-3.
4. Jennings LK, Krywko DM. Hyperemesis Gravidarum. In: *StatPearls.* Treasure Island (FL): StatPearls Publishing; c2021. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK532917>
5. Afsar MN, Jhinu ZN, Bhuiyan MA, Islam Z, Siddiqua TJ. Helicobacter pylori infection and micronutrient deficiency in pregnant women: A systematic review and meta-analysis. *BMJ Open Gastroenterol.* 2020;7(1).
6. Agmon N, Sade S, Pariente G, Rotem R, Weintraub AY. Hyperemesis gravidarum and adverse pregnancy outcomes. *Arch Gynecol Obstet.* 2019;300:347-53.
7. Asrade L, Misikir D, Alemu H, Belachew A, Almaw H. Determinants of hyperemesis gravidarum among pregnant women attending antenatal care at public and private hospitals in Bahir Dar City, North-West Ethiopia, 2022: A multicenter unmatched case control study. *BMC Womens Health.* 2023;23(1):225.
8. Mohammed DF. The association between Helicobacter pylori infection and hyperemesis gravidarum. *Al-Azhar Int Med J.* 2021;2(10):19-25.

9. Zenebe Tefera, Mandefro Assefaw, Mulugeta W/Selassie, *et al.* Determinants of hyperemesis gravidarum among pregnant women in public hospitals of Mekelle City, North Ethiopia, 2019: Unmatched case-control study. Preprint; c2021 Apr 9. Available from: <https://doi.org/10.21203/rs.3.rs-366722/v1>
10. Mohammed HQ, Alkareem Ficog IH. Seropositive *Helicobacter pylori* and pregnancy-related vomiting in the first trimester of pregnancy. *Biochem Cell Arch.* 2019;19(1).
11. Tamamy E, Rahman EA, Abdel Fattah AT, Hemdan MH. The relation between *Helicobacter pylori* seropositivity and hyperemesis gravidarum in pregnant women during the first trimester. *Egyptian J Hosp Med.* 2019;77(2):4894-4898.
12. Yisak H, Belete D, Mahtsentu Y. *Helicobacter pylori* infection and related factors among pregnant women at Debre Tabor General Hospital, Northwest Ethiopia, 2021: Anemia highly related with *H. pylori*. *Womens Health.* 2022;18:17455057221092266.
13. Abdella B, Ibrahim M, Tadesse I, *et al.* Association between *Helicobacter pylori* infection and occurrence of anemia among pregnant women attending antenatal care in Kulito Health Center, Halaba Zone, South Ethiopia, 2018. *Anemia.* 2020;2020:6574358.
14. Baingana RK, Enyaru JK, Tjalsma H, *et al.* The etiology of anemia during pregnancy: A study to evaluate the contribution of iron deficiency and common infections in pregnant Ugandan women. *Public Health Nutr.* 2015;18(8):1423-35.
15. Alrawi ZA, Hussein MR. Comparison between ultrasound and hysteroscopy in the diagnosis of intra-uterine space-occupying lesion in Tikrit Teaching Hospital. *Int. J Gynaecol Sci.* 2024;6(2):21-5. DOI: 10.33545/26648393.2024.v6.i2a.35.
16. Al-Dorri ZR, Salih IN, Khuder SH. Serological detection of *Helicobacter pylori* infection in pregnant women related to ABO blood group. *Arch Razi Inst.* 2022;77(2):591-597.
17. Ahmed SH, Mohammed SA. *Helicobacter pylori* infection in pregnant women and its correlation with the alterations of some trace elements levels in the serum at Maternity Teaching Hospital in Erbil City. *Al Mustansiriyah J Pharm Sci.* 2018;18(2):41-50.
18. Derso A, Abere A, Tegne Y, Bewket G, Kiflie A. Prevalence and risk factors of *Helicobacter pylori* infection among pregnant women in Northwest Ethiopia. *Ethiop J Health Biomed Sci.* 2022;12(2):56-58.
19. Hussein MR, Ahmed DK. Maternal and fetal outcome in patients with history of polycystic ovary syndrome. *Indian J Med Forensic Med Toxicol.* 2019;13(4).
20. Hussein MR. Evaluation of relationship between obesity biomarker and anti-Müllerian hormone in obese infertile women. *Biochem Cell Arch.* 2019;19(1).
21. Hussein MR, Mohammed RJ, Jameel AA. The umbilical coiling index in term of pregnancy as a marker of perinatal outcome. *Ann Trop Public Health.* 2020;23(7):816-823.

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Noori HS, Hussein MR. Association between hyperemesis Gravidarum in first trimester pregnancy and *H. pylori*. *International Journal of Gynaecology Research.* 2024;6(1):26-31.