Original Article

PREVALENCE OF ANAEMIA IN PREGNANT WOMEN OF DISTRICT MARDAN

Shahana Nisar[1], Shafi Ullah[1], Muhammad Said[2], Muhammad Khalid[3]

[1]Department of Community Medicine, Bacha Khan Medical College, Mardan, Pakistan

[2]Department of ENT and Head & Neck Surgery, Bacha Khan Medical College, Mardan, Pakistan

[3]Department of Community Medicine, Gajju Khan Medical College, Swabi, Pakistan

ABSTRACT

Anemia is a major public health problem, and it particularly affects [pregnant women]. We want to learn how common anemia is among [pregnant women] in Pakistan's District Mardan by doing this Study. A cross-sectional study was conducted using a statistically significant sample of [pregnant women] seeking treatment at hospitals in the study area.

Objectives: *Our study's major goal was to compare the rates of anemia in the first, second, and third trimesters among [pregnant women] who visited the Gynecology OPD. To determine how often different degrees of anemia occur during pregnancy. Examine the prevalence of anemia among college-educated and low-income female workers and housewives.*

Materials & Methods: *It was a cross-sectional Study that was being undertaken. Gynecology outpatient department of the Mardan Medical Center was the site of the Study from jan 2017 to jan 2018. The Study took a total of two months to complete. After obtaining participants' signed agreement, Studyers matched participant information to the questionnaires. SPSS version 16 was used to input and analyze the data from the questionnaires, and the results were shown in tabular, bar chart, and pie chart formats. Extensive analysis was performed, and conclusions were derived, using this data.*

Results: *Out of a total of [150] patients, our Study found that [74.8%] were anemic and [25.2%] were not. Out of [50] [pregnant women], [54] percent were anemic in the first trimester. Out of [50] [pregnant women], [82%] were anemic in the second trimester, whereas [18%] were not. Third-trimester anemia prevalence was [88%] (out of [50]) while non-anemia prevalence was [16%]. Out of a total of [150] participants, [56.4%] were categorized as having mild anemia, [38.3%] as having moderate anemia, and [5.4%] as having severe anemia. [73.9] percent of the educated and [26.1] percent of the non-educated were anemic, whereas [74.9] percent of the uneducated and [[24].7] percent of the non-educated were anemic, respectively. In a sample of [14] working women, [57.1] were anemic whereas [42.2%] were not. Seventy-five percent of the [136] housewives were anemic, whereas just [24] percent were not.*

Conclusion: *This study concluded that anemia, as in other parts of the world, is also prevalent in Mardan, Pakistan. Anemia is prevalent mainly in [pregnant women] in the last trimester of pregnancy. In both educated and uneducated women, the prevalence of anemia is the same, and anemia is more common in Housewives than working ladies.*

Keywords: *prevalence , pregnant females ,Anaemia, ,Iron-deficiency.*

INTRODUCTION

Anaemia affects many people in poor and developed countries. This problem is particularly significant in poorer countries where poverty, illiteracy, nutrition, and health raise anemia risk.

Correspondence:
Dr. Shahana Nisar
Lecturer
Department of Community Medicine
Bacha khan Medical College Mardan, KPK,
Cell: 0301-8197202
Email: shahananisar48@yahoo.com

The WHO defines anemia as a haemoglobin concentration below 13 g/dl in males over 15, 12 in non-[pregnant women], and 11 in [pregnant women] are especially at risk of iron deficiency[1]. The danger of iron insufficiency is higher during pregnancy because maternal iron demands exceed absorbable iron intakes[2]. If a woman's diet lacks iron, her body uses maternal iron to meet foetal needs. If the mother has inadequate iron stores before pregnancy, the foetus' demands may cause iron deficiency anemia1. Malaria, hookworm, and helminthic diseases may induce or compound anemia in underdeveloped areas, hence

they must be treated together[3].

Strong observational evidence links maternal iron deficiency anemia before and during pregnancy to preterm or low-birth-weight delivery.[4]. Premature labor and development limitations may lead to severe anemia (Hbo1 < 80 g/L) in young neonates. Low birth weight and preterm birth are lowest with 95–105 g/L haemoglobin (118).

The CDC advises [pregnant women] to be tested for anemia and given iron supplements, except in instances of hemochromatosis5.

Safe motherhood includes prenatal treatment to reduce maternal and perinatal mortality. Developed and emerging countries aim for universal prenatal care to treat or monitor the condition for improved outcomes[5].

The nutritional effects of anemia are global. Age, race, climate, diet, poverty, education level, health, etc. all have a role. Anemia is another common issue during pregnancy.[6] Statistics from the World Health Organization show that between 53 and 90 percent of [pregnant women] in developing nations suffer from anemia. Anemia is more prevalent in Asia because of cultural and societal reasons. Both the mother and the unborn child are at risk if anemia worsens during pregnancy. Pakistan is one of only six nations in the world to be responsible for more than half of all maternal fatalities, with a total fertility rate of 4.33 percent7 and a maternal mortality ratio of 297 per 100,000 live births[6.7]The death rate among mothers is a major problem. Most of the 600,000 annual fatalities that occur during pregnancy and labor might be avoided with the right equipment and knowledge.[8]

There are 390 maternal deaths for every 100,000 live births worldwide. Women's chance of dying during pregnancy and childbirth is raised by a factor of 50 to 100 in low-income nations. Numerous nations in Africa and South Asia have birthrates of 700 per 100,000 people. Inadequate pregnancy and delivery care for women in these regions create these substantial risk differences[5].

Statistics on maternal mortality for nine countries are included in the WHO database on female anemia prevalence. These numbers are estimated to be anything from 27 in India to 194 in a Pakistani hospital[8] per 100,000 live births.

Mother and child had a dismal prognosis until the advent of safe blood transfusions and anti-anemia medications. While there have been no recent reports of maternal fatalities in this nation, rising rates of miscarriage, premature birth, and perinatal mortality cannot be ignored.

Pregnancy-related anemia risk factors were investigated. [pregnant women] should avoid the region of southwest Ethiopia due to its high frequency of anemia. Anemia was most often caused by soil-transmitted helminth infections and Plasmodium malaria. Integrating deworming and instruction on proper hygiene into prenatal care is essential. Therefore, instead of Hb and blood group[9], malaria and other illnesses should be detected during ANC visits.Reducing the rate of anemia needs women's sustained access to economic and educational opportunities throughout the long term[10].Checking for other potential causes of anemia is essential. Supplemental iron should be given to women before conception and again after delivery or loss.

Severe anemia (haemoglobin $\leq$ 8.0 g/L) may need iron beyond 120 mg daily. Start oral therapy, although parenteral medicine may be required if not tolerated[11].

The consequences of pregnant anemia are unknown to patients (6.48%). In the third trimester, 94.59% of [pregnant women] obtained their first prenatal care. 48.64% are 18–24 and pregnant early[12]. Therapy evaluation for pregnant iron deficient anemia. Anemia prevalence increases with pregnancy, thus doctors must take 3 or 4 blood tests to offer adequate prenatal care and diagnosis anemia early.Anemia was examined in [pregnant women] in rural Uganda. The high rate of anemia in Kiboga district is attributable to poverty and inadequate nutrition and health education, which inhibits the adoption and utilization of the public-health intervention package to treat pregnant anemia.[12].

A metropolitan Pakistani Study studied [pregnant women]'s anemia prevalence and risk factors. Many [pregnant women] at 20–26 weeks had moderate to severe anemia. Pica, tea, and egg and red meat reduction produced anemia. Iron source nutrition, especially before pregnancy, should educate women how food affects iron absorption[13].

A prevalence and aetiology investigation of pregnant anemia in southern Benin revised national

treatment plan. This study reveals that intestinal helminthiasis causes a lot of moderate anemia during pregnancy. Preventative antihelmintics are essential throughout pregnancy[14].

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Anaemia prevalence and risk factors in urban Pakistani [pregnant women] were examined. Many [pregnant women] at 20–26 weeks had moderate to severe anemia. Pica, tea, and egg and red meat reduction produced anemia. Before pregnancy, iron source nutrition should inform women how food affects iron absorption[15].

MATERIALS AND METHODS

Cross-sectional study The Study included all [pregnant women] in the first, second, and third trimesters (17–49 years old) who visited the Gynae OPD of Mardan Medial Complex from jan 2017 to jan 2018. The goal, advantages, and hazards of the Study were explained to willing participants before collecting data and blood. Interviews with [pregnant women] provided all data. All ladies were advised that data would be kept secret and used solely for Study.

INCLUSION CRITERIA

All the women of reproductive age group(15 to 49 years) who were pregnant, and came for antenatal check-up to the Gynae OPD of Mardan Medical Complex.

Exclusion criteria: All the women of reproductive age group (15 to 49 years) who were not pregnant, and came for check-up to the Gynae OPD of Mardan Medical Complex

DATA COLLECTION PROCEDURE

Data was acquired from Mardan Medical Complex Gynae OPD prenatal patients. Data collectors assessed conjunctival, palmer, face, shortness of breath, and nail bed pallor. The patients were sent to MMC for haemoglobin testing. The haemoglobin levels are classified as mild (10.0-9.9), moderate (8.1-9.9), and severe (<8). The lab findings were then synchronized to prevent mistakes.

Data analysis Procedure: SPSS 26 software was used to analyze data, which was then discussed and concluded. Considering the result, comments and recommendations were made for further study.

RESULTS

The current Study examined pregnant anemia in Mardan. Randomly chosen [pregnant women] from April to June 2015 were [150]. The Study participants were 14–49 years old. The blood image showed 75% anaemia and 25% normal (Fig. 1).We observed that 74.8% of [pregnant women] were anemic and 25.2% were not.In the first trimester, 54% were anemic and 46% were not. Out of 50, 82% were anemic and 18% were not in the 2nd Trimester. In the 3rd Trimester, 88% were anemic and 12% were not. From [150], 56% were Mild, 38% Moderate, and 5% Severe anemia. In the educated group, 73.9% were anemic and 26.1% were not, whereas in the uneducated group, 75.9% were anemic and 24.7% were not. Out of 14 working women, 57.1 were anemic and 42.2% were not. 76.5% of [136] housewives were anemic and 23.5% were not.
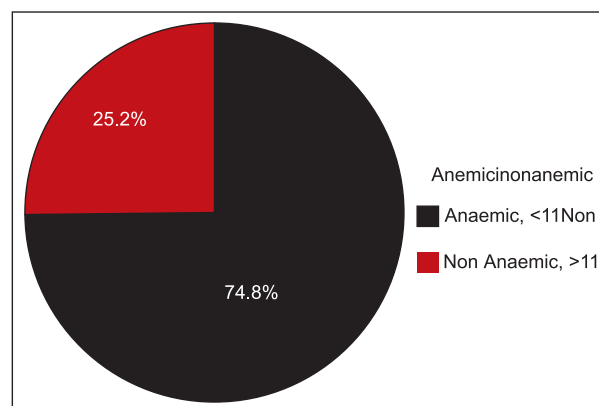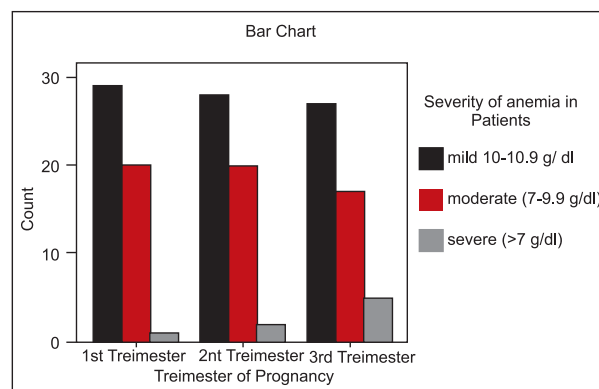

Figure 1: Gender wise

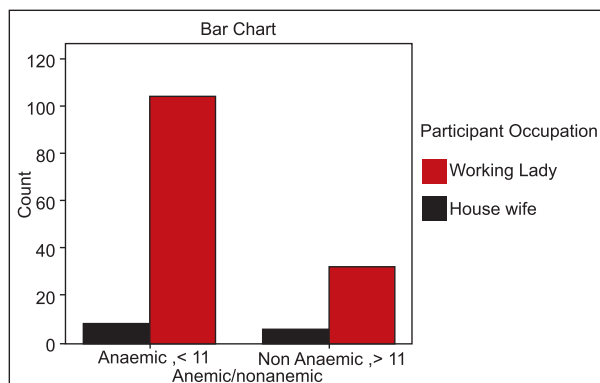Figure 2: Severity of anemia in patients

Figure 3: Comparison of anaemic and non-anaemic woman

DISCUSSION

Pregnancy-related anemia is very frequent (35–75%) in many impoverished nations. The prevalence of anemia in India was 88%, Tanzania 86%, Nigeria 47%, Indonesia 74%, Philippines 48%, and Bangladesh 47%6. In district Mardan, this Study examined pregnant anemia rates.

A cross-sectional Study of 150 patients (50 each trimester) was conducted from September 1st to November 31st, using a random sample procedure. According to blood tests of [150] [pregnant women], 75% were anemic and 25% were not. Our results are comparable to those in Lahore, where 80% were anemic and 20% were not[17] and Faisalabad[18].

The Study found that anemia prevalence rose with pregnancy, peaking in the 3rd trimester and parity. In the first trimester, 54% were anemic and 46% were not. In the 2nd trimester, 82% were anemic and 18% were not.

In the 3rd Trimester, 88% were anemic and 12% were not. Similar to a study in Faisalabad, 2.7% of anemic [pregnant women] were in 1st trimester, 8% in 2nd, and 89.3% in 3rd trimester[18]. Out of [1[50]], 56% were Mild, 38% were Moderate, and 5% were Severe, consistent with a study in Faisalabad: 24% mild, 33% moderate, and 18% severely anemic.

High rates of anemia in the third trimester may be attributable to increased micronutrient demand and inadequate nutrition.[19]No significant link was found between anemia and schooling. The mean age of [pregnant women] in this Study was 26.07±5.04 years. A Karachi Study found that [pregnant women] had a mean age of 28.28±5.20 years[20].

CONCLUSION

Anemia during pregnancy may be caused by diet. The only way to minimize anemia is to screen, treat, and provide fortified diet (wheat flour with folic acid and iron), salt with iron, and milk sugar to develop long-term iron storage.

Further Study is required for national results. Lab-scale investigations are urgently needed to identify the causes of anemia in [pregnant women], particularly in underdeveloped countries. Special health promotional and supplementation initiatives are needed to educate individuals, particularly pregnant women, about their health.

REFERENCES

1. Camaschella C. Iron-Deficiency Anemia. N Engl J Med. 2019;372(19):1832–43.

2. Stevens GA, Finucane MM, De-Regil LM, Paciorek CJ, Flaxman SR, Branca F, Pena-Rosas JP, Bhutta ZA, Ezzati M. Global, regional, and national trends in haemoglobin concentration and prevalence of total and severe anaemia in children and pregnant and non-pregnant women for 1995–2011: a systematic analysis of population-representative data. Lancet Global Health. 2018;1(1):e16-25.

3. Lopez A, Cacoub P, Macdougall IC, Peyrin-Biroulet L. Iron deficiency anaemia. Lancet. 2017;387(10021):907–16. .

4. Goonewardene M, Shehata M, Hamad A. Anaemia in pregnancy. Best Pract Res Clin Obstet Gynaecol. 2020;26(1):3–24. .

5. Percy L, Mansour D, Fraser I. Iron deficiency and iron deficiency anaemia in women. Best Pract Res Clin Obstet Gynaecol. 2017;40:55–67. .

6. Mirza FG, Abdul-Kadir R, Breymann C, Fraser IS, Taher A. Impact and management of iron deficiency and iron deficiency anemia in women's health. Expert Rev Hematol. 2018;11(9):727–36. .

7. Daru J, Zamora J, Fernández-Félix BM, Vogel J, Oladapo OT, Morisaki N, Tunçalp Ö, Torloni MR, Mittal S, Jayaratne K, et al. Risk of maternal mortality in women with severe anaemia during pregnancy and post partum: a multilevel analysis. Lancet Global Health. 2018;6(5):e548-54. .

8. Cook RL, O'Dwyer NJ, Parker HM, Donges CE, Cheng HL, Steinbeck KS, Cox EP, Franklin JL, Garg ML, Rooney KB, et al. Iron Deficiency Anemia, Not Iron Deficiency, Is Associated with Reduced Attention in Healthy Young Women. Nutrients. 2017;9(11):1216.

9. Kamruzzaman M, Rabbani MG, Saw A, Sayem MA, Hossain MG. Differentials in the prevalence of anemia

among non-pregnant, ever-married women in Bangladesh: multilevel logistic regression analysis of data from the 2011 Bangladesh Demographic and Health Survey. BMC Womens Health. 2019;15:54.

10. Organization WH. The global prevalence of anaemia in 2011. Geneva Switzerland WHO. 2021;126(11):5409–18.

11. Jiang S, Pang XH, Duan YF, Bi Y, Wang J, Yin SA, Yang LC, Yang ZY. The influencing factors of anemia for pregnant women between 2010–2012 in China. Zhonghua Yu Fang Yi Xue Za Zhi. 2018;52(1):21–5. .

12. Hu Y, Chen J, Li M, Li W, Yang Y, Yang L, Wang R, Piao J. Study on the anemia status of Chinese urban residents in 2010–2012. Zhonghua Yu Fang Yi Xue Za Zhi. 2016;50(3):213–6. .

13. Ma QY, Zhang SK, Liu J, Wang QM, Shen HP, Zhang YP, Liu M. Anemia status of Chinese rural women of reproductive age in 2012. Zhonghua Yi Xue Za Zhi. 2018;98(26):2115–9. .

14. Ma Q, Zhang S, Liu J, Wang Q, Shen H, Zhang Y, Liu M. Study on the Prevalence of Severe Anemia among Non-Pregnant Women of Reproductive Age in Rural China: A Large Population-Based Cross-Sectional Study. Nutrients. 2017;9(12):1298.

15. Zhao SY, Jing WZ, Liu J, Liu M. Prevalence of anemia during pregnancy in China, 2012–2016: a Meta-analysis. Zhonghua Yu Fang Yi Xue Za Zhi. 2018;52(9):951–7. .

16. Lin L, Wei Y, Zhu W, Wang C, Su R, Feng H, Yang H. Prevalence, risk factors and associated adverse pregnancy outcomes of anaemia in Chinese pregnant women: a multicentre retrospective study. BMC Pregnancy Childbirth. 2018;18(1):111.

17. Gupta PM, Hamner HC, Suchdev PS, Flores-Ayala R, Mei Z. Iron status of toddlers, nonpregnant females, and pregnant females in the United States. Am J Clin Nutr. 2017;106(Suppl 6):1640s–1646s.

18. Dragonas T, Christodoulou GN. Prenatal care. Clin Psychol Rev. 1998;18(2):127–42.

19. WHO. Haemoglobin concentrations for the diagnosis of anaemia and assessment of severity. Geneva: World Health Organization; 2018. .

20. Yang QF, Qi ZP, Zheng LY, Zhang M, Bao RL, Lu Y, Wang XH. Study on anemia of women of childbearing age in southeast coastal areas of Guangdong province. Matern Child Health Care China. 2015;30:4802–5. https://doi.org/10.7620/zgfybj.j.issn.1001-4411.2015.28.15. .

21. Wang YJ, Li JG, Xu WL, Wang XB, Liu YL, Jiang H. Anemia status and correlation factors in rural regions of Hebei province. Chin J Prev Med. 2008;42:339–41.