ORIGINAL ARTICLE

Prevalence of Anemia in pregnancy at District Shaheed Benazir Abad, Sindh

RIAZ AHMED QAZI[1], FARIDA WAGAN[2], TABINDA TAQI[3], *INAAM QADIR JAVED HASHMI[4], KHADEEJATUL KUBRA HASHM[5]I, ABDUR RAHMAN HASHMI[6], TAHIR AHMAD MUNIR[7]*

ABSTRACT

Aim: To evaluate prevalence of anemia in pregnancy based on socio- demographic factors and clinical hematological profile. The early diagnosis and correction of anemia required to reduce maternal and fetal complications.

Study design: An experimental and descriptive study

Place and Duration of Study: The study was conducted from Jan 2016 to Dec 2017 at out patient gyne/obs and pathology departments of Peoples University of Medical and Health Sciences for Women Nawabshah.

Methods: Total 552 pregnant women at their ages ranged between 19 to 28 and 29 to 46 years were included in this study. The detailed history from each pregnant woman attending gyane/obs OPD was taken along with clinical examination. The 5ml clotted whole blood was taken from each pregnant women and send to the pathology departments of PUMHSW for the diagnosis of anemia

Results: The prevalence of mild anemia among 552 pregnant women with their ages such as 23.5±4.5 and 38.5±8.5 was 52.5% moderate anemia followed by 27.5% milled anemia and 19.9% sever anemia respectively. The hematological parameters such as hemoglobin concentration, PCV, absolute values and RBC count were significantly reduced while WBC count with percentage of neutrophils were significantly increased and platelet count was normal.

Conclusion: The prevalence of mild to moderate anemia in pregnancy was higher than the severe type of anemia. To reduce the complications of pregnancy among young females, early identification and treatment of anemia should be done on priority bases.

Keywords: Prevalence, anemia, pregnancy, hematological parameters, socio-demo graphic (SD) factors

INTRODUCTION

The word “Anemia” is derived from two Greek words, Ane is absent or without and mia is blood, hence anemia meaning without blood and it is commonest hematological disorder in which either the hemoglobin is reduced below 11g/dl or the oxygen-carrying capacity of red blood cells (RBCs) is decreased or numbers of RBCs is reduce to meet the body physiological functions during pregnancy[1].

There are two causes of anemia in pregnancy such as physiological and pathological, the combined effect of hemodilution due to increase plasma volume leading to reduction in hemoglobin concentration and increase iron requirement needed for fetal growth and hematopoiesis causes physiological anemia while deficiency of iron B12, folic acid, and of vitamins A, C and D are the pathological causes of anemia in pregnancy. Other causes of anemia include hemoglobinopathies, infectious diseases, parasitic infestations, inflammatory diseases, chronic renal and liver diseases, bone marrow insufficiency and bleeding during pregnancy[2]. Anemia during pregnancy results weakness, anorexia, pallor, palpitation, tiredness, anorexia, indigestion, edema, and soft systolic murmur[3].

Anemia in pregnancy can be potentiated by various risk factors in developing countries such as poverty, marriages in teen ages, repeated pregnancies and infections, uterine or placental, gastrointestinal bleedings, peripartum blood loss, dietary habits, life style, poor health facilities and hygiene in rural areas, geographical location, and weather or season[4]. The fetal complications of anemia includes low birth weight and prenatal death while among mothers it may result postpartum hemorrhage, puerperal infection, and thromboembolic phenomena, cardiac failure, pregnancy induced hypertension and placenta praevia[5]. The early diagnosis and treatment of anemia in pregnancy is essential due to the dangerous maternal and fetal complications and diagnosis is made by estimation of hemoglobin to assessing the type of anemia such as mild if hemoglobin lies between 10g/dl and 11g/dl, moderate if it is between 8g/dl and 10g/dl and sever types if it is less than 7g/dl, other hematological parameters such as PCV, absolute values and complete blood count are detected as well as examination of peripheral blood smear is used to detect red blood cell morphology and presence of malarial parasites[6]. The most common management regarding anemia in pregnancy include knowledge, attitude and practice towards nutritional awareness during pregnancy, with iron replacement therapy, improvement in economy of our people, good hygiene conditions, avoidance of medication suppressing process of hematopoiesis and treating infections reduce the chances of anemia, while severe type of anemia in pregnancy required whole blood and packed red blood cells transfusions[7,8].

This study was design to determine the prevalence of anemia in pregnancy, early diagnosis and treatment strategies to reduce the feto-maternal morbidity and mortality.

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[1]Associate Professor, of Pathology, PUMHS, Nawabshah.
[2]Professor and Chairman, Department of Gyne&Obs, Peoples University of Medical & Health Sciences, Nawabshah.
[3]Assistant Professor, Department of Physiology, Nawabshah.
[4]Professor and Chairman, Department of Microbiology/ Pathology, Mohi-ud-Din Islamic Medical College, Mirpur
[5]DPT, MBBS Student MIMC, Mirpur, AJ & K.
[6]MBBS Student Central Park Medical College (CPMC), Lahore.
[7]Professor and Chairman, Department of Physiology Mirpur, Correspondence to Dr. Riaz Ahmed Qazi, Email: qaisernaqvipk@yahoo.com

MATERIAL AND METHODS

Total 552 pregnant woman at their ages range between 19 to 28 and 29 to 46 years were included in this study all these women coming from rural and urban areas from districts Shaheed Benazir Abad, Naushahro Feroze and Shanghar advised by physicians and general practitioners for the diagnoses of anemia to the diagnostic and research laboratory of PUMHS at Nawabshah. The pregnant women with anemia due to any cause other than pregnancy were included while the pregnant women with acute or chronic illness, gestational diabetes mellitus, hypertension, obesity, more than 40 years age and history of blood transfusion during present pregnancy were excluded from the study. After history and clinical examination, 5 ml venous blood was taken in K3-EDTA tube for complete blood picture (RBC, WBC, and platelet count, differential count of leucocytes, hemoglobin percentage, haematocrit, mean corpuscular volume, mean corpuscular haemoglobin, mean corpuscular haemoglobin concentration) using an automated haematology analyzer (Nihon khoden) machine and thick and thin blood films for blood parasites exam.

RESULTS

Table 1: Socio-demographic characteristics of the study population

Sociodemographic characteristics	%age
Mean age 23.5±4.5 37.5±8.5	390(61.8)% 162(38.2)%
Gravida Primigravida Multi gravida	311 (56.2) % 201 (43.8) %
Gestational age 1st trimester 2nd trimester 3rd trimester	 191 (34.4) % 291 (40.0) % 140 (25.6) %
History of Abortion 1 to 2 kids 3 to 4 kids	 490 (88.7)% 62 (11.3)%
Occupation Housewife Labor Government employees	280 (50.7) % 170 (30.7) % 102 (18.6) %
Socio economy condition Poor Middle class Upper middle class	350 (63.4) % 120 (21.7) % 82 (14.8) %
Literacy Illiterate Literate	401 (72.6) 151 (27.3)
Area of residence Rural urban	395 (71.5) 157 (28.4)

Total 552 pregnant woman at their ages such as 23.5±4.5 and 37.5±8.5 and Primigravida 311(56.2%) in 2nd trimester 291(40%) of pregnancy presented with history of abortion of 1 to kids (88.7) % were detected in our study. They belong to the poor class 350(63.4%), they were Housewives 280(50.7%), illiterate 401 (72.6%) lived in rural areas 395(73.5%) were absorbed in this study (table.1). the clinico hematological profile in our study was Complain of weakness pallorness wait loss nausea and vomiting dyspnea palpation RBC count /cumm 3.7±0.6 hemoglobin g/dl 8.7±2.7 PCV,% 29±2 MCVfl, 63±7 MCH pg,±1.8, MCHC g/dl, 27±1.1,WBC count/cumm, 14000±2000, Neutrophil%, 74±4, lymphocyte%,15±2, monocyte%, 5±1,eosinophil's% 3±1 Platelate count/cumm, 2,70000± 35000. The peripherals blood smear showed microcytic and hypochromic RBC. WBC and platelate were normal in morphology while no any hemoparasite seen (table.2).

Table 2: Clinical and hematological parameters among the pregnant women

Clinical Findings	Hematological Parameters
Complain of weakness Pallorness Wait loss Nasea and Vomiting Dyspnea Palpation	**COMPLETE BLOOD COUNT** RBC count /cumm 3.7±0.6 hemoglobin g/dl 8.7±2.7 PCV,% 29±2 MCVfl, 63±7 MCH pg, 21±1.8 MCHC g/dl, 27±1.1 WBC count/cumm 14000±2000 Neutrophil%, 74±4 lymphocyte%, 15±2 monocyte%, 5±1 eosinophil's% 3±1 Platelate count /cumm 2,70000±35000
Anemia:1+ve to 3+ve **Trimester of pregnancy:** it can be 1st 2nd and 3rd trimester of pregnancy can be detected by u/s exam.	**Peripheral blood smear:** it showed microcytic and hypochromic RBC. WBC and plate late are normal in morphology while no any hemoparasite seen

Table 3: Prevalence of anemia in pregnancy

Prevalence	No. of pregnant women	%age
Milled anemia	110	19.92
Moderate anemia	290	52.53
Sever anemia	152	27.53

DISCUSSION

Throughout the world, out of 1.6 billion anemic peoples lived in middle and low income countries, 56 millions (31.2%) pregnant women of 14% in developed and 50% in developing counties were anemic, however prevalence rate of anemia was 65 to 75% in India as reported by Shiro K, K, Kalaivani. In our study anemia at reproductive age was 15 to 49%, while it was 34 to 51% in India, China, Turkey, Bangladesh, Afghanistan, Iran and Libya reported by Stevens GA, Finucane MM, De-Regil LM and Elzahaf R. A and Omar M. Shahani AR, Shahani S, Kazi N stated that prevalence of mild to moderate anemia in pregnant women of rural Sindh at the age of 30 to 35 years was high and was found to be due to iron and folic acid deficiency. The frequency of anemia among the teen ages and uneducated pregnant mothers were reported to be 69.9%, 28.8% and 1.3% respectively by Sana Ahiruddin, Pushpa Chetandas, Sheikh Irfan Ahmed, Raheela Baloch. In different cities of Pakistan such as Karachi, Multan, Faisalabad, Lahore, Quetta, karak, Kohat, and urban Peshawar, the prevalence rate of moderate to sever anemia in pregnancy at the age of 18-47 years was 24% to 96% as reported in the literature[15,16,17]. They reported that risk factor that causes anemia in pregnant women of Pakistan occurred due to the nutritional deficiencies such as iron, folate, Vitamins A,D,C,B12 and zinc as a result of inadequate dietary intake and poverty while other contributing factors including medications that suppress hemopoeisis, intestinal helminth infection, malaria, menstruation. The similar determinant or risk factors enhancing the anemia in pregnant mothers of Ethopia and Nigeria except HIV infection induced anemia in

pregnancy were observed by Sisay Eshete Tadesse, Omer Seid, Yemane G/ Mariam, Abel Fekadu, Yitbarek Wasihun, Kedir Endris et, al. Zhang Q, Li Z, Ananth CV reported that age of anemic pregnant women was more than 35 years in china and ethopia as compared to the anemic pregnant women of Nigeria where age limit was 18–24 years. The many physiological and hematological changes during pregnancy such as increase total blood volume up to 1.5 liters with increase plasma volume causes hemodilution leading to physiological anemia followed by leukocytosis, hypercogulation and impaired immunity were demonstrated by Mohamed AO. The clinico hematological findings such as Pain, nausea, vomiting, anxiety and sign & symptoms of anemia, significant reduction in hemoglobin concentration 1–2 g/dL, hematocrit, MCV, MCH, MCHC, lymphocytes%, eosinophil%, basophil%, monocytes%, RBCs, platelet counts and neutrophilic leukocytosis were recorded by Wulsa N., Soren G, Pathapati R. M.

The fatal outcome of anemia in pregnancy in the form of preterm baby, intrauterine death or growth retardation and maternal complications such as hypertension, cardiac failure, preterm labour preeclampsia were common, therefore prevention and treatment of this disaster is required as reported by J.B. Sharma, Meenakshi Shankar.

CONCLUSION

1. In our study, prevalence rate of moderate anemia among the prime gravida pregnant women with history of abortion 1 to 2 child in second trimester, at their ages 19 to 46 years, poor, illiterate, house wives was higher than the mild and sever type of anemia.
2. A good communication between doctors and pregnant women can prevent anemia and its complications
3. To address anemia, videos, pamphlets, posters and cell phone messages regarding nutrition and supplementation, hygienic practices, compliance with medications and follow-up care should be considered.

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