ORIGINAL ARTICLE

Frequency of Iron Deficiency Anemia in Nulliparous Pregnant Females during Last Trimester

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ABSTRACT

Background: When it comes to nutritional anemia, the major factor causing it is considered to be Iron Deficiency Anemia or IDA. In pregnancy, women tend to have increased need for iron and hence are more susceptible to IDA. Therefore pregnant women are considered as to be more affected by Iron Deficiency Anemia.
Aim: To determine the frequency of anemia in pregnant females during last trimester.
Methodology: A total of 100 women were taken in this study with first pregnancy and gestational age >28 weeks of gestation. Data was collected using cross sectional design form each female meeting inclusion criteria from OPD of RHC Manga Manddi, District Lahore. Their blood sample from each females visiting for their antenatal check-ups was taking in aseptic measure and was sent to hospital laboratory. Their reports were collected by principal investigator and Hb levels were recorded. Anaemia was defined as per standard criteria i.e. if Hb < 11 mg/dl.
Results: The mean age of cases was 25.65 ± 4.42 years [18 and 35 years as minimum and maximum ages]. The average Hb was 10.01 and 1.69 mg/dl with minimum and maximum levels as 6.50 14.30 mg/dl. Among all females the frequency of anemia was seen in 71(71%) of the cases while in rests of 29(29%) of the case the Hb level was above 11 mg/dl.
Conclusion: Even in nulliparous pregnant females the frequency of anemia is too high. We must pay special attention to maintain required levels of Hb during pregnancy for better fetomaternal outcome.
Keywords: Pregnancy, pramigravida, hemoglobin level, iron deficiency anemia

INTRODUCTION

In under-developed countries, anemia is affecting approximately two-third of population and is major cause of morbidity and mortality in several countries. In pregnant women, anemia is stands on top of the list of diseases affecting pregnant women.[1]Anemia in case of pregnancy can be defined as haemoglobin content less than 110g/L at normal level of sea. This value of anemia is lower by 2 S.D when compared with normal Haemoglobin level.[2] When haemoglobin level falls below 70g/L it needs urgent clinical care and when this level falls futhur below 40g/L it may cause CHF, sepsis and ultimately death.[2-4] There are several physiological and metabolic alternations in female body during pregnancy.[5] It includes changes in physiology of maternal body as well as production of fetal and many placental hormones required in pregnancy. It also leads to an increased blood volume, stroke volume and resultant increased cardiac output.[6]similarly alternations in temperature and heat sources and ventilation methods also occurs[7]. It is observed that in phase of pregnancy a mean Hb value lowers from 13.3g/dL to 11g/dL normally at 36 weeks of gestation. Following this, 20 weeks of gestation is a point during pregnancy at which women have lowest Hb value. This value remains same till 30 weeks of gestation and increases a little bit in third trimester.[8, 9].A healthy pregnancy in women requires minimum 500mg of iron in body to meet up needs of gestation without any iron supplementation. Because of high metabolism during pregnancy this store of iron is completely used till end of pregnancy. 700-1400mg of iron is usually needed in pregnant women. Daily usage of iron raises from 4mg-6mg to 6-8mgs.[10].The frequency and prevalence of anemia is approximately found to be 26.66%-90.5% in different studies in Pakistan .[11, 12].

This study is designed to find frequency of anemia in pregnant females during last trimester. Most of the studies are done in different trimester and different parity. By specifying and taking restrict and unique population we can find the burden, if we find high frequency of anemia then in future nulliparous females should also considered high risk females and special attention can be paid to correct their Hb levels for better pregnancy outcome.

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MATERIALS AND METHODS

A total of 100 women were taken in this study with first pregnancy and gestational age >28 weeks of gestation. Using cross sectional study design cases were taken from RHC Manga Manddi District, Lahore.Data was collected using non-probability purposive sampling. Data was collected form each female meeting inclusion criteria as given under. All females aged 18-35 years of age with first pregnancy and gestational age > 28 weeks till before delivery was included in the study. While females with more than one fetal found (confirmed on dating scan or LMP), known cases of chronic medical disorder like Chronic Kidney Disease were excluded from study. Basic information like age, gestational age and family income was obtained after taking informed consent. Their blood sample from each females visiting for their antenatal check-ups was taking in aseptic measure and was sent to hospital laboratory. Their reports were collected by principal investigator and Hb levels were recorded. Anaemia was defined as per standard criteria i.e. if Hb < 11 mg/dl. Data was entered and analysed using SPSS version 22. Mean ± S.D was used to describe quantitative data like age, gestational age and Hb levels. Frequency (%) was used for categorical data like anaemia.

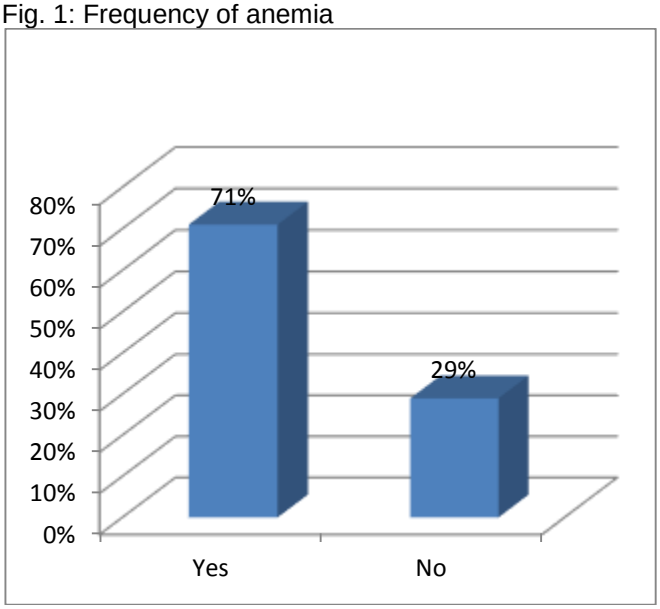
RESULTS

The mean age of cases was 25.65 ± 4.42 years with minimum and maximum age of 18 and 35 years. The mean gestational age was 33.45 ±3.09 weeks with minimum and maximum gestational age as 29 and 38 weeks. Most of the females i.e. 87(87%) were had monthly income Rs. ≤ 14000 and 10(10%) females had >Rs. 14000 – 25000 monthly income and rests of 3(3%) of the females had family income >Rs. 25000. The average Hb was 10.01 and 1.69 mg/dl with minimum and maximum levels as 6.50 14.30 mg/dl. Among all females the frequency of anemia was seen in 71(71%) of the cases while in rests of 29(29%) of the case the Hb level was above 11 mg/dl.

Table-1: Descriptive Statistics of age (years), Gestational age (weeks) and Hb (mg/dl)

	Age (years)	Gestational age (weeks)	Hb mg/dl
Mean	25.65	33.45	10.01
S.D	4.42	3.09	1.69
Range	17	9.00	7.80
Minimum	18	29.00	6.50
Maximum	35	38.00	14.30

Fig. 1: Frequency of anemia



DISCUSSION

Among several nutritional deficiency diseases anemia is major disease affecting pregnant women in Pakistan.[13, 14] This anemia in pregnant women can lead to adverse pregnancy complications creating unfavourablesitustions for both mother and fetus.[1] Although many factors are associated with anemia mostly iron deficiency correlates to anemia(80% of cases)[15]. Factors such as malnourishment, short IPI, parity, infestations and infection of parasites and abortions cause iron deficiency at the very start of pregnancy in women of Pakistan[16]. A fresh research study related to frequency of anemia in years of 1990-2010[17]. The global threat of anemia remains significant specially in women and children although there has been increased effort of diagnosing and treating this disease[17].

Roughly 1.62 billion people are targeted by anemia worldwide[18,19]. The frequency and prevalence of anemia is approximately found to be 26.66%-90.5% in different studies in Pakistan[12]. Compared frequencies of anemia in different countries show us that anemia in pregnancy in women of Guyana was 73.9%, 61.1% in pregnant women of Jamaica, 50% in pregnant women Bahrain, 39.7% in pregnant women Kuwait, 32.6% in pregnant women China, 89.9% in pregnant women Monchergorsk Russia[20]. Our findings are unique as we focused on nullliparous females and last trimester only, most the studies are not practically done in first pregnancy and in last trimester. Another observation depicted that this frequency gradually increases with number of children a woman has; for example women having no children had frequency of anemia during pregnancy

as 25%, women with 1 child as 26%, women with 2 child as 29%.[21]Anotherresearch study shows us that frequency of anemia in nulliparous females was found to be 57(52.8%)[22]. In our study nulliparous females had high frequency of anemia as 71%. It must be noted that iron storage in body of mother depend on fetal and infant baby storage of iron and also incidence of iron deficieny anemia affects in infancy. To get significantly improved outcome during pregnancy iron-folic acid supplementation is administered antenatally[23].

CONCLUSION

Even in nulliparous pregnant females the frequency of anemia is too high that may lead to poor fetal and maternal outcome. We must pay special attention to maintain required levels of Hb during pregnancy for pregnancy outcome.

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