

“Maternal anemia and its impact on perinatal outcome in a tertiary care Hospital of Pune, in Maharashtra.”

¹Pankaj Kumar, ²Prasad Pore, ³Usha patil

Abstract:

Background: The importance of anemia as a major public health problem throughout the world is commonly recognized. Anemia is one of the most common observed nutritional disease in India. Present study was planned to study the prevalence of anemia in pregnant females admitted to the tertiary care hospital for delivery, types of anemia observed and study outcome after delivery.

Material and method: A hospital based record study was conducted in a tertiary care hospital. The data was collected from the records available in hospital.

Results: The study comprised of 126 pregnant women came for delivery in Bharaati Vidyapeeth Medical College, Pune associated tertiary care Hospital.

The prevalence of anemia at the time of delivery was found to be 46 %. Peripheral smear revealed that 78% had normochromic normocytic , 44% pregnant women had microcytic hypochromic and 2% had megaloblastic anemia.

Anemia had observed amongst females with < 3 follow up visits, with history of marriage before 18 years of age, with history of no consumption of IFA tablets or registration of ANC.

Conclusion: The present study confirmed the importance of registration, regular visits and consumption of IFA tablets to prevent development of anemia and its outcome on pregnancy.

Keywords: Pregnant women, Anemia, Tertiary Care Hospital.

Introduction:

The importance of anemia as a major public health problem throughout the world is common-

ly recognized ^[1]. According to WHO, in developing countries, the prevalence of anemia among pregnant women averages 56%, ranging between 35 to 100% among different regions of the world. It is now one of the most frequently observed nutritional disease in the world. It is especially prevalent in women of reproductive age, particularly during pregnancy.

In view of the above, present study was carried out find out the prevalence of anemia

¹Postgraduate student, ²Associate professor
³Ret. D.H.O. and Lecturer
Department of Community Medicine
Bharati Vidyapeeth Deemed University , Pune.

Corresponding author:

Dr.Pankaj Kumar Gupta
Email: pankaj74gupta@yahoo.com
Contact: 07620024590

amongst pregnant women and socio-demographic factors associated with anemia in pregnancy.

Material and Method:

After taking required permissions, a Hospital based record study was conducted in Bharaati Vidyapeeth Medical College, Pune Associated Tertiary Care Hospital, Pune city. All the pregnant women admitted during 1.7.2011 to 30.8.2011 for delivery were included in the study.

The data was collected from records of these women by using pretested profarma. The majority of the patients come from rural areas. In addition, it serves a large number of patients from the adjoining districts of Aurangabad, Kolhapur, Jalgaon, Nashik & Nager formed the study population.

Purposive sampling was applied. Based on previous findings that 50% pregnant women in rural Maharashtra are anemic, taking $P = 0.50$, allowable error (d) = 10% of P , and using this in the formula of sample size $n = 4 P(1-P) / d^2$, sample size was estimated to be 126.

Anemia was classified as per the WHO severity grading criteria.

Thus anemia in pregnancy ranges from mild (10.0g/dl), moderate (7.0-9.9g/dl) to severe (<7.0g/dl)

The type of anemia was done as per standard peripheral blood smear examination method.

Results:

Our study comprised of 126 pregnant women came for delivery in a tertiary care hospital. The prevalence of anemia at the time of delivery was found to be 46 % (Table-1). Amongst these most of the (46%) women were in the age group of 21-25 years (Table-1). Anemia had been observed amongst females with < 3 follow up visits (32.5%), with history of marriage before 18 years of age (62.5%), with history of no consumption of IFA tablets (80%) or registration of ANC (62.5%) (Table-2). All the still births/IUD occurred amongst anemic women only. Fifty seven percent women amongst the anemic mother had low birth weight babies. Children with APGAR score < 7 were more amongst anemic women as compared to non-anemic (Table-3).

Peripheral smear revealed that 6.35 % had Normocytic Hypochromic anemia, 34% pregnant women had microcytic hypochromic and 2% had megaloblastic anemia. The peripheral blood smear (PBS) identified normocytic hypochromic and microcytic hypochromic blood picture to be most common morphological variant of anaemia.

These two pictures of PBS are characteristic of iron deficiency anaemia (Table-4).

Observations and Results:

The following observations were found, tabulated as per distribution.

Table-1: Distribution of anaemia by socio-demographic characteristics:

Characteristic	Anaemic	(%)	Normal	(%)	Total	p value
Age (in years)						p < 0.001
15-20	20	(90.91)	2	(9.1)	22	
21-25	22	(37.93)	36	(62.069)	58	
26-30	1	(3.85)	25	(96.15)	26	
31-35	15	(78.95)	4	(21.05)	19	
36-40	0	(0)	1	(100)	1	
All	58	(46.03)	68	(53.97)	126	
Educational status						p < 0.001
Illiterate	5	(83.330)	1	(16.67)	6	
Primary	2	(100)	0	(0)	2	
Middle	10	(47.62)	11	(52.38)	21	
HSC	34	(56.67)	26	(43.33)	60	
Graduation	6	(20)	24	(80)	30	
Post Graduate	1	(14.29)	6	(85.71)	7	
All	58	(46.03)	68	(53.97)	126	

Table-2: Distribution of Anemia by Registration, ANC Visits and IFA tablets consumption:

Characteristic	Anaemic	(%)	Normal	(%)	Total	p value
Registration in ANC clinic						
Registered	53	(44.915)	65	(55.085)	118	p > 0.05
Non registered	5	(62.5)	3	(37.5)	8	
All	58	(46.032)	68	(53.97)	126	
ANC Visits						
< 3	13	(32.5)	27	(67.5)	40	p < 0.05
3OR >3	45	(52.33)	41	(47.67)	86	
	58	(46.032)	68	(53.97)	126	
Iron /Folic acid (IFA) tablets consumption						
IFA TAKEN	50	(43.10)	66	(56.897)	116	p < 0.05
IFA NOT TAKEN	8	(80)	2	(20)	10	
All	58	(46.03)	68	(53.96)	126	

Table-3: Distribution of anaemia by delivery out come.

Characteristic	Anaemic	(%)	Normal	(%)	Total	p value
Delivery out come						
Live baby	54	(44.26)	68	(55.74)	122	p < 0.05
IUD/Stillbirth	4	(100)	0	(0)	4	
All	58	(46.03)	68	(53.968)	126	
Birth weight of Baby						
LBW	34	(57.62)	25	(42.37)	59	p < 0.05
NBW	24	(35.82)	43	(64.18)	67	
All	58	(46.03175)	68	(53.96825)	126	
Apgar score						
<7	19	(57.57576)	14	(42.42424)	33	p > 0.05
7 OR >7	39	(41.93548)	54	(58.06452)	93	
All	58	(46.03175)	68	(53.96825)	126	

Table-4: Distribution of pregnant women according to the percentage of hemoglobin and types of anemia :

Characteristic	Total number of pregnant women	(%)
Hb at the time of delivery		
< 7%	2	(1.58)
7-10.9%	56	(44.44)
Equal to /more than 11.0%	68	(53.96)
All	126	(100)
Types of anemia		
Normocytic Normocromic	78	(61.90476)
Normocytic Hypochromic	8	(6.349206)
Microcyti Hypochromic	36	(28.57143)
Megaloblastic Anemia	2	(1.587302)
Anisopoiklocytes And Macrocytic Poly Chromasia	2	(1.587302)
All	126	(100)

Discussion:

In India, anemia is the second most common cause of maternal deaths, accounting for 20% of total maternal deaths. Anemia affects mainly the women in child bearing age group, young children and adolescent girls. Association of anemia with adverse maternal outcome such as puerperal sepsis, ante-partum hemorrhage, post-partum hemorrhage and maternal mortality is no longer a debatable subject .

Apart from the risk to the mother, it is also responsible for increased incidence of premature births, low birth weight babies and high perinatal mortality ^[2]

Pregnant women from rural Maharashtra, one of the developed states of India registered a prevalence of 56.4%. The National Nutritional Anemia Prophylaxis Programme (NNAPP) was initiated in 1970 with the aim to reduce the prevalence of anemia to 25 percent. Since 1992, the daily dosage of elemental iron for prophylaxis and therapy has been increased to 100 mg and 200 mg, respectively under Child Survival and Safe Motherhood (CSSM) Programme. ^[3]

Anemia in pregnancy is a common problem in most developing countries and a major cause of morbidity and mortality especially in malaria endemic areas. ^[4] The Indian subcontinent alone contains nearly half the world's anemic women. ^[5]

A higher risk of urinary tract infection, pyelonephritis and preeclampsia has been reported in observational studies on iron deficient women who are not necessarily anemic. ^[6] It causes direct as well as indirect deaths from cardiac failure, hemorrhage, infection and pre-eclampsia ^[7]

The prevalence of iron deficiency is far more than the prevalence of anemia and iron deficiency often develop during the later stages of pregnancy even in women who enter pregnancy with relatively adequate iron stores ^[8]

Virender P. Gautam, Yogesh Bansal ⁽⁹⁾ mentioned in his study of anemia in pregnant women in rural area of Delhi the prevalence is 96.5%. Another study in Nigeria prevalence of anemia is 76.5% in pregnant women. Amongst these most of the (46%) women were in the age group of 21-25 years same observation was found in Vijaynath , Patil Ramesh study in Raichur and Delhi.

OA Idowu, CF Mafiana, Nigeria observed higher prevalence (81.5%) of anemia recorded among teenage mothers (15–19 years). Total 58% of pregnant women are HSC as in other studies the severity of anemia was inversely related to educational status.

Severe anemia was more often seen when first pregnancy occurred before 18 years of age . Anemia had been observed amongst females with < 3 follow up visits (32.5%), with history of non registration of ANC (62.5%) or no consumption of IFA tablets (80%). Peripheral smear revealed

that 78 % had normochromic normocytic anemia, 44% pregnant women had microcytic hypochromic and 2% had megaloblastic anemia. A study by Vijaynath and, Patil Ramesh in Loni Maharashtra. the most common type anemia is Microcytic hypochromic (63.24%).

All the still births/IUD (100%) occurred amongst anemic women only. Which is also a major factor for perinatal mortality rate . Fifty eight percent women amongst the anemic mother had low birth weight babies.

Conclusion:

The present study confirms the importance of registration, regular visits and consumption of IFA tablets to prevent development of anemia and its outcome on pregnancy. It requirement for studies on anaemia among adolescent girls and a strategic shift in a programme focussed on pregnant women alone to broaden the coverage so as to include adolescent girls also for control of anaemia . These factors are amenable to education of girls and delaying the age at marriage.

References:

1. Vijaynath , Patil Ramesh, Prevalence of anemia in pregnancy, Indian Journal of Applied & Basic Medical Sciences: 2010;12B:15
2. Rakesh Kakkar, Monica Kakkar, S D Kandpal, Sumit Jethani: Study of anemia in adolescent school girls of Bhopal, Indian

, Indian Journal of Community Health; 2011; 22: 2.

3. Nadeem Ahmad, Piyush Kalakoti, Rubeena Bano, Syed M.M.Aarif: The prevalence of anaemia and associated factors in pregnant women in a rural Indian community: Australasian Medical Journal 2010;3:5
4. OA Idowu, CF Mafiana, and Dapo Sotiloye; Anaemia in pregnancy: A survey of pregnant women in Abeokuta, Nigeria: Afr Health Sci 2005;5(4): 295–299
5. Joll Y Rajaratnam, Rajaratnam Abel, C. Ganes An, S. Amalan Jay Aseelan; Maternal Anaemia: A Persistent Problem In Rural Tamil Nadu: The National Medical Journal Of India 2000; 13:5.
6. Parveen Rasheed, Manal R Koura, Badria K Al-Dabal, Suhair M Makki ; Anemia in pregnancy : A study among attendees of primary health care centers: Annals of Saudi Medicine 2008; 28:449-452
7. Riffat Jaleel, Ayesha Khan; Severe anemia and adverse pregnancy outcome : Journal of Surgery Pakistan (International) 2008;13:4.
8. Lindsay H Allen; Anemia and iron deficiency: effects on pregnancy outcome: American Journal of Clinical Nutrition 2000;71:1280-1284.
9. Virender P. Gautam, Yogesh Bansal, D.K. Taneja, Renuka Saha : Prevalence of

Amaemia Amongst Pregnant Women and its
Socio-Demographic Associates in a Rural
Area of Delhi:IJCM 2010; 27:4.

Date of manuscript submission: 10 November 2011

Date of initial approval: 27 December 2011

Date of Peer review approval: 29 January 2012

Date of final draft preparation: 22 February 2012

Date of Publication: 2 March 2012

Source of Support: Nil, **Conflict of Interest:** Nil

PISSN: 2250-284X, EISSN: 2250-2858