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ANEMIA IN PREGNANT WOMEN OF EASTERN SUDAN

Ishag Adam [(1)] , Gehad Elghazali [(2)] Mustafa Idris Elbashir[(2)]

1.University of Khartoum , Faculty of Medicine.Obs & Gyn.

2.University of Khartoum , Faculty of Medicine.Depatment of Biochemistry

Key words: epidemiology, anemia, pregnancy, Sudan

It has been estimated that over half of all women in the world experience anemia during pregnancy with 95% occurring among women in the developing counteries1. Many risk factors for anemia were identified in pregnancy 2. In a community-based study we have recently reported that around 26% of the women of Eastern Sudan were anaemic, as well as we have shown that anaemia is one of the risk factors for deep venous thrombosis in the Sudanese pregnant women 3,4. However no proper published data exist for anaemia, its epidemiology and the risk factors during pregnancy in Sudan.

We performed a prospective study to estimate the incidence, timing and the risk factors for anemia during pregnancy in a population of Sudanese women in Eastern Sudan. Pregnant women attended antenatal care clinic at New Halfa Teaching Hospital were approached for participation in the study during September-November 2003. After a verbal consent a fixed questionnaire containing sociodemographic characters, obstetrical history as well as the known risk factors for anemia was filled (history of abortion, lack of iron supplementation, oral contraceptive pills (OCP) use and pica). All patients were examined clinically to detect signs of anemia–if present. Spleen was palpated and the gestational age was confirmed by Ultrasound in cases of discrepancy. Hemoglobin was estimated by colorimeter (WPA, U.K) and blood films for malaria were prepared using Geimsa stain. A well-trained technician who was blinded about the women's data did the laboratory investigations. Data was entered in microcomputer using SPSS for windows the students, *t*-test, compared the mean ± SD of the age, gestational age, and hemoglobin. Relative risk was calculated for the possible factors. $P \leq 0.05$ was considered significant.

Three hundred and two pregnant women at the mean ± SD gestational age of 27.9 ± 6.7 weeks were enrolled to the study. 189(62.6%) of 302 women were anemic

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(Hb < 10 g/dl). 18/189 (3.2%) were severely anemic (Hb < 7 g/dl). 117(61.9%), 70 (37) and 2 (1.1 %) of these anaemic women were in the third, second and the first trimester respectively.

The mean age, parity, were not significantly different between the anemic and non- anemic women. The gestational age was significantly higher in the anaemic women (P = 0.04). History of Pica, spleenomegally, malaria were associated with anaemia, History of abortion, age, parity, twins schistosomiasis, not using OCP, tonics were not associated with anaemia in these group of women, (tables 1& 2).

Table 1: Patients characteristics (mean ± SD).

The variable	Anaemic (n =189)	Non anaemic (n =113)	*P*. Value
Age, Years	25.8 ± 5.4	26.1 ± 5.1	0.6
Parity	2.1± 2.3	2.0 ±1.9	0.5
Gestational age, weeks	28.6 ± 6.8	26.7 ± 8.6	0.04

Table 2: Risk factors for anemia during pregnancy, data were shown as number (%).

Variable	Anaemic cases (*n* = 189)	Non Anaemic (*n* = 113)	Relative risk	95% confidence interval
Abortion				
Yes	30 (15.9)	13 (11.5)		
No	159 (84.1)	100 (88.5)	1.45	0.72-2.9
Not using OCP				
Yes	180 (95.2)	108 (95.6)	0.92	0.32-2.8
No	9 (4.8)	5 (4.4)		
Not using tonics				
Yes	155 (82.0)	94 (83.2)	0.92	0.49-1.7
No	34 (18.0)	19 (16.8)		

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Pica				
Yes	37 (19.6)	10 (8.8)	2.5	1.1-5.26
No	152 (80.4)	103 (91.2)		
Spleen				
Yes	16 (8.5)	1 (0.9)	10.3	1.35-79.2
No	173 (91.5)	112 (99.1)		
Twins				
Yes	11 (5.8)	1(0.9)	6.9	0.88-54.3
No	178 (94.2)	112 (99.1)		
Schistosomiasis				
Yes	7(3.7)	4(3.5)	1.04	0.3-3.6
No	182 (96.3)	109(96.5)		
Falciparum Malaria			3.08	1.3-7.2
Yes	32(16.9)	7(6.2)		
No	157(83.1)	106(93.8)		

Correspondence to:
Dr. Ishag Adam
P. O. Box 61 , Tel.+249-421-22101, +249-421-21880 Fax +249 421 22070

E.mail : ishagadam@hotmail.com

Faculty of medicine , University of Khartoum , Sudan.

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