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# **Anaemia in Pregnancy - Its Cause in the Underprivileged Class of Karachi**

Pages with reference to book, From 90 To 92

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## **Abstract**

A prospective study of the frequency and type of anaemia amongst poor urban parturients of Karachi was done. It was performed at 2 large teaching hospitals over the time span January to September, 1990. Out of 318 women studied, 104(32.7%) were anaemic (Hb levels <10gm/dl). The type of anaemia was assessed. Iron deficiency predominated and was seen amongst 63.5% of the anaemic population. There was an even distribution of other kinds of anaemia amongst the remainder of the population (JPMA 44:90,1994).

## **Introduction**

Anaemia complicating pregnancy threatens the life of both mother and foetus. Maternal and foetal mortality and morbidity are associated with this disorder<sup>1,2</sup>. Anaemia is highly prevalent in the under-developed world<sup>3-5</sup> and is predominantly seen in women of low socio-economic class<sup>6</sup> and amongst grand multiparae<sup>7</sup>. Prior research in Pakistan documents iron deficiency as the leading cause of anaemia in pregnancy. Megaloblastic anaemia, particularly folate deficiency is thought to be the next more common type of anaemia<sup>3,8</sup>. However, this was not conclusively shown by later studies<sup>9</sup>. Considering the frequency of occurrence of this condition and its impact on maternal and child health, a re-look at the aetiology of anaemia in pregnancy was desired, using standardized methods of analysis. The present study looks at the frequency and cause of anaemia in under privileged urban parturients delivering in Government run tertiary care centres. The decisive value for anaemia is Hb of 10 gm/dl<sup>6</sup>.

## **Patients and Methods**

The sites of the study were the Jinnah Postgraduate Medical Centre (JPMC) and the Civil Hospital and Dow Medical College Karachi (CHK) -2 large Government run ‘Free’ tertiary care centres catering to the needs of the poor. The study population comprised of women admitted in labour. All women admitted to the labour room of the JPMC from 1st January, 1990 to 30th March, 1990 and in the CHK from 1st July, 1990 to 30th September, 1990 were included in this analysis. Excluded were women with a history of any bleeding during pregnancy or on admission and those admitted in shock. A blood sample was drawn immediately on admission and prior to maintenance of intravenous infusion or blood (if necessary). Haematological assessment comprised haemoglobin levels, haematocrit and red cell indices measured by the coulter S + W automated haematology analyzer at the AKUH laboratory. In addition, an evaluation of the type of anaemia was made by a blood film and by measuring serum ferritin, B12 and red cell folate in all women. Hb electrophoresis was performed if blood picture and discriminant function test (based on red cell indices) were suggestive of thalassemia minor.

## **Results**

A total of 318 women who delivered during the study period were included in this analysis. All were poor (average per capita income per Rs. 150-100). The majority (56%) were of the age group 30 to 39, 37% of the age group 20 to 29, 2% below the age of 20 and 5% above the age of 40. Thirty percent were grand multiparae (parity >5) whereas only 17% were primigravidae. The vast majority (98%) were housewives. One hundred and four women (32.7%) had a Hb value <10 gm/dl. Anaemia was predominantly of the hypochromic microcytic (iron deficiency) type (Table)

**Table. Causes of anaemia in pregnancy**

	<b>Number (n=104)</b>	<b>%</b>
<b>Iron deficiency</b>	<b>66</b>	<b>63.5</b>
<b>Folate deficiency</b>	<b>14</b>	<b>13.5</b>
<b>Normocytic normochromic</b>	<b>12</b>	<b>11.5</b>
<b>B12 deficiency</b>	<b>8</b>	<b>7.7</b>
<b>Thalassemia minor</b>	<b>4</b>	<b>3.8</b>

and was seen in 66 women (63.5%) of the anaemic population, 14 (13.5%) of the anaemic parturients had folate deficiency and 8 (7.7%) had B12 deficiency. Normally, normochromic anaemia was seen in 12 and thalassemia minor in 4 of the anaemic women.

## **Discussion**

This study is in continuity with our prior research<sup>6,10</sup> which established anaemia in pregnancy as a disease predominantly of the low socio-economic class. Anaemia was found to be common amongst the highly parous and the malnourished<sup>10</sup>. This analysis is an attempt to determine the type of anaemia amongst urban pregnant women of Karachi. It is stimulated by the controversial data on the cause of anaemia in prior studies<sup>3,8,9</sup>. At two large tertiary care centres looking after the poor population of Karachi city, women admitted in labour were chosen as the study population. This was necessary as the majority of women delivering here are "Unbooked" and antenatal evaluation is difficult. In contrast to prior studies, red cell folate rather than serum folate was used to measure folate deficiency keeping in mind that serum folate may fluctuate widely and does not depict accurately the folate status of the individual<sup>11</sup>. In conjunction with prior studies<sup>3,6</sup>, anaemia was found to be common and 32.7% of the study population had a Hb value <10 gm/dl. The predominant cause of anaemia was iron deficiency. Folate deficiency was less important as a cause of anaemia as was B12 deficiency and other types of anaemia. Apart from iron deficiency, the other types of anaemia were almost equally distributed in the study women. This study highlights that iron deficiency is widespread amongst pregnant women and is probably the most neglected of all nutritional deficiencies. In the under-developed world, a re-look at the nutritional status of women of reproductive age is desired with the emphasis on prevention and early correction of iron deficiency anaemia. This alone may reduce maternal and foetal morbidity and mortality dramatically.

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## References

1. Harrison, ICA Anaemia, malaria and sickle cell disease. In Philpott, RH. ed. Clinical obstetrics and gynaecology, Vol.9. Obstetric problems in developing world. London, Saunders, 1982, pp. 445-47.
2. Pritchard, J.A., Walley, P.J. and Scott, D.E. The influence of maternal folate and iron deficiencies on intrauterine life. Am.J.Obstet.Gynecol., 1969;104:388-96.
3. Haahmi, J.A., Afroz, N., Nisa, Q., et al. Study of anaemia in pregnancy at the Jinnah Postgraduate Medical Centre, Karachi. Pak.J.Med.Res., 1973;12:22-32.
4. Hussain, M.A. Studies on the nutritional status of expectant mothers and newborn babies. Bangladesh Med.Res. Counc.Bull, 1976;2:120-25.
5. Sood, S.K., Ramachandran, K., Mathur, M., et al. WHO sponsored collaborative studies on nutritional anaemia in India. The effects of supplemental oral iron administration to pregnant women. Q.J.Med., 1975;44:241-48.
6. Aziz Karim, S., Khurshid, M. and Rizvi, J.H. Anaemia in pregnancy: occurrence in two economically different clinic populations of Karachi. J.Pak.Med.Assoc., 1988;38:271-72.
7. Aziz Karim, S., Memon, A.M. and Qadri, N. Grand multiparity: a continuing problem in developing countries. Asia-Oceania J.Obstet.Gynaecol., 1989;15:155-60.
8. Aziz, M.A., Siddiqui, AR. and Zahir, M. Anaemia in an urban population of West Pakistan - a study of folic acid and vitamin B12 deficiency. Pak.J.Med.Res., 1972;11:16-25.
9. Razvi, Ni, Ilahi, A., Qureshi, M.J. et al Problems of the incidence of iron deficiency anaemia in pregnant women under Pakistani conditions. J.Pak.Med.Assoc., 1980;30:5.
10. Aziz Karim, S., Khurshid, M., Rizvi, J.H., et al. Anaemia in pregnancy- a study of 709 women of Karachi. Trop. Doct., 1990;20:184-85.
11. Hoffbrand, A.V., Newcombe, B.F.A. and Mollin, D.L Method of assay of red cell folate activity and the value of the assay as a test of folate deficiency. J.Clin.Pathol.