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The Obstetric Behaviour of Anaemic Gravid Patients

by
S. P. Wong, MB, MRCOG.
KANDANG KERBAU HOSPITAL, SINGAPORE.

The study of anaemia in pregnancy is not easy. Not all workers are agreed on a limit for blood levels in pregnancy below which the condition is termed anaemia. Difficulty and disagreement arise also in the assessment of the dangers associated with anaemia in pregnancy. Reports on this are often conflicting. In the opinion of Browne and Browne (1960) there is little risk if the haemoglobin is above 7.4 gm%, the danger being great only when this level falls below 4.4 gm%. Magee and Milligan (1951) even doubted the advantages in raising the haemoglobin level by iron therapy during pregnancy. Tasker et al (1956) go so far as to imply that one need not be perturbed in allowing a patient to go into labour with a haemoglobin level between 3 and 5 gm%.

On the other hand, Scott (1961) has produced figures to show an increased incidence of premature labour, perinatal mortality, post-partum haemorrhage and infection in the puerperium in cases of anaemia. Hibbard (1964) drew attention to the association between folic acid deficiency and an increased incidence of congenital malformation, abortion, and abruptio placentae. Ian Donald (1964) stated that practically all the complications of pregnancy are aggravated quantitatively by anaemia.

In order to assess this problem of anaemia in pregnancy in its local setting, a prospective study of the obstetric behaviour in anaemic gravid patients was carried out at Kandang Kerbau Hospital.

Material and Method of Study:

All patients going into labour from 1st September 1965 to 31st August 1966 with a haemoglobin level of 60% (8.8 gm%) and below were included in this study. The reason for selecting this group of patients was to determine to what extent they were at risk. Those patients in whom anaemia was detected early in pregnancy and corrected before delivery were not included. The patients under study were closely supervised during labour. Ergometrine 0.5 mg was administered intravenously whenever possible at crowning of the head.

Incidence of Anaemia:

It is not possible to estimate the exact incidence of anaemia in this hospital as a haemoglobin estimation is only carried out in patients who are suspected to be anaemic. Kwa (1966) in a recent analysis of 1000 consecutive patients in the antenatal clinic, found that 389 cases have a haemoglobin level below 10.0 gm%. Table I shows the incidence of anaemia at Kandang Kerbau Hospital as compared with those of other series. Our figure of 38.9% is very high indeed.

Table I

Incidence of anaemia
(Haemoglobin less than 10.0 gm%)

K.K. Hospital (1966)	38.9% 11.6% (8.8 gm%)
Doyle and McGrath (1954)	31.4%
Todd and Kan (1965)	22.1%
Lund (1951)	20 %
Scott (1961)	14.4%
Hapke et al (1960)	12 %

Results of the Present Study:

A total of 128 patients were studied. Of these 82 cases were unbooked.

Racial Distribution:

The racial distribution of the patients is shown in Table II. There was a proportionately larger number of Indian patients.

Table II

Racial Distribution

Race	No. of cases
Chinese	69 (53.9%)
Indian	37 (28.9%)
Malay	20 (15.7%)
Others	2 (1.5%)

Gravidity:

As shown in Table III, more than half of the patients were gravida 6 or more. Multiparity and prolonged lactation had been shown in other series to contribute to the incidence of anaemia.

Table III

Gravida:	No. of cases
1	11
2	8
3	10
4	10
5	12
6 and over	77 (60%)

Haemoglobin Levels and Types of Anaemia:

Tables IV and V show the haemoglobin levels and the types of anaemia encountered. There were 19 cases of megaloblastic anaemia and 13 of them occurred in Indian patients.

Table IV

Haemoglobin level	No. of cases
21 — 30%	10
31 — 40%	22
41 — 50%	45
51 — 60%	51

Table V

Type of anaemia	No. of cases
Iron deficiency	107
Megaloblastic	19
Haemolytic	1
Haemoglobin H Disease	1

Symptoms and Signs of Anaemia:

There were two features worthy of note. Firstly, even when the anaemia was of moderate degree, there might be no symptoms and signs which directly called attention to its existence. Their onset was insidious. Tasker et al (1956) found that clinical features become unequivocal only when the haemoglobin level fell to or below 6 gm%. Secondly, symptoms and signs like giddiness, lassitude, palpitations, and oedema might be overlooked and regarded as part and parcel of a normal pregnancy. Clinical judgment is certainly too fallacious in deciding on the presence or absence of anaemia in pregnant women. In the present series, only 3 patients complained of giddiness, 1 of dysphagia and 1 alopecia.

Antenatal Complications:

The complications during the antenatal period are listed in Table VI.

Table VI

Antenatal Complications

Complication	No. of cases
Toxaemia of pregnancy	40
Urinary tract infection	17
Antepartum Haemorrhage	11
Pyrexia	5

Toxaemia of Pregnancy:

Gatenby and Lillie (1960) found that the cardinal signs of toxaemia, oedema, albuminuria, and hypertension occurred in 14% of cases of

megaloblastic anaemia. Tasker et al (1956) also found these signs to be present quite frequently in their series. They observed that these signs rapidly disappeared with rest in bed. The high percentage of grande multipara in the present series probably contributed to the incidence of toxaemia.

Urinary Tract Infection:

Giles and Brown (1962) found urinary tract infection to be more than twice as common in anaemic patients as in controls. Most of the patients did not have urinary symptoms and the infection was discovered on microscopic and bacteriological examination of the urine.

Antepartum Haemorrhage:

There were 7 cases of accidental haemorrhage and 4 cases of placenta praevia. Here again, grande multiparity might have contributed to the high incidence. However, the association between megaloblastic erythropoesis and accidental haemorrhage has been demonstrated by Hourihane et al (1960) and Hibbard (1964).

Labour:

The influence of anaemia on labour has not been adequately studied but there have been reports suggesting a higher incidence of primary uterine inertia (McCormick 1944) and of prolonged labour (Traylor and Turpin 1951, Briscoe 1952). In the present series, labour was completed under 12 hours in the majority of cases (Table VII). In only one case was labour over 24 hours duration. This is probably explained by the proportionately large number of grande multipara in this study. The onset of labour was spontaneous in 113 cases and induced in 15 cases, the indications for induction were toxaemia of pregnancy and postmaturity. The induction-delivery interval was not prolonged.

Table VII
Duration of Labour

Duration (in hours)	No. of cases
Below 6	72
6 — 12	26
12 — 18	18
18 — 24	4
Over 24	1

Mode of Delivery:

Table VIII shows the mode of delivery of the patients.

Table VIII

Mode of Delivery	No. of cases
Spontaneous Delivery	115
Low Forceps	3
Vacuum Extraction	3
Caesarean Section	7

The Caesarean section rate was 6% as compared with the hospital incidence of 2.5% (Wong 1966). The indications for Caesarean section were placenta praevia (4 cases), foetal distress (2 cases), and brow presentation (1 case).

Post-partum haemorrhage:

There were 6 cases of post-partum haemorrhage in spite of close supervision during labour and the administration of Ergometrine 0.5 mg intravenously at crowning of the head.

Birth Weights of Infants:

That anaemia in pregnancy is often accompanied by premature labour has been demonstrated in quite a number of studies, notably that of Scott (1961) and Kleine (1962). In the present series, there were 16 infants with a birth weight of less than 5 pounds (Table IX).

Table IX

Birth Weights

Birth weight in pounds	No. of babies
1 — 2	1
2 — 3	3
3 — 4	5
4 — 5	7
5 — 6	32
6 — 7	49
7 — 8	29
Over 8	10

There were 8 pairs of twins but only 2 of these babies were under 5 pounds in weight. The corrected prematurity rate was 11% — double the hospital incidence. But anaemia is frequently a concomitant of low socio-economic status, poor medical care, closely spaced pregnancies, and heavy household work, each of which may itself be a contributing factor in prematurity.

Neonatal Haemoglobin:

It was not possible to study the haemoglobin levels in the neonates in the present series. Other workers have shown that the infants of anaemic mothers are rarely anaemic at birth. However, these infants are deficient in stored iron and the incidence of anaemia among them a few months after birth is very high.

Perinatal Mortality:

Table X shows the number of stillbirths and neonatal deaths in the series.

Table X

Perinatal Mortality

Stillbirths	13 cases
Neonatal deaths	3 cases

There were 7 fresh stillbirths following accidental haemorrhage and one following premature labour at 32 weeks. Of the 5 macerated stillbirths, one was an anencephalic, one a hydrops, and in the remaining three, the mothers had pre-eclamptic toxaemia. Of the 3 neonatal deaths, findings at autopsy showed evidence of meningitis in one, haemorrhage into the adrenals in one, and intra-uterine asphyxia in the other.

Maternal Mortality:

There was one maternal death in the series. The patient was a Chinese aged 37 years, gravida 10, para 9, unbooked. She was admitted in labour with oedema of the legs, albuminuria and a blood pressure of 140/90 mm Hg. She was febrile. The haemoglobin estimation was 27%. Spontaneous vaginal delivery occurred within 25 minutes after admission. The blood loss was estimated to be 4 ounces. One pint of blood was transfused after the third stage of labour and she was given antibiotic cover. On the third day of the puerperium, she developed congestive cardiac failure and died 6 hours later in spite of treatment with Digoxin and diuretics.

Tasker et al (1956) had 2 deaths in 296 cases. One patient died 10 days after delivery in heart failure and the other 6 hours after delivery of hepatic failure. In the experience of Fullerton and Turner (1962), congestive cardiac failure often develops for the first time in labour, or even more commonly in the first few hours after delivery. Of the 18 deaths in their series of 92 cases, 11 died within 16 hours of delivery.

Blood Transfusion:

Blood transfusion was given to 45 patients. Most of the blood transfused was in the form of packed cells. A simple blood transfusion though it increases the oxygen carrying capacity of the blood, also increases the blood volume. This may precipitate heart failure in the severely anaemic patient. Tasker et al share the view of Browne and Browne that since many patients with anaemia do in fact have normal labours, it is probably wiser to perform an immediate blood transfusion in case of an accident, rather than to give a "prophylactic" transfusion before labour.

As a means of increasing the red cell mass without augmenting the total blood volume, Fullerton and Turner (1962) have described a technique of partial exchange transfusion in severely anaemic patients. Using this method, they were able to reduce the maternal mortality from 20% to under 3%.

Maternal Morbidity:

Table XI shows the complications in the puerperium.

Table XI

Complications in the Puerperium

Complication	No. of cases
Shock	1
Fever	12
Urinary tract Infection	13
Infected perineal wound	1

Shock:

One patient with a haemoglobin of 38% went into shock 11 hours after delivery. The blood loss at delivery was estimated to be 4 ounces.

She recovered after resuscitation. This case illustrates how even the loss of a small amount of blood is sufficient to tip the balance in an anaemic patient.

Fever:

Swinging fevers with no apparent infective cause and unresponsive to any antibiotics are not uncommonly found in anaemic patients during the puerperium. Adequate treatment of the anaemia brought the fever down quickly.

Duration of stay after Delivery:

The duration of stay in hospital after delivery was definitely prolonged in the cases under study (Table XII) owing to the increased morbidity and the need to recuperate from the severe anaemic state.

Table XII

Duration of Stay in Hospital after Delivery

Duration in days	No. of cases
3 and below	41
4 — 7	43
over 7	44

Summary and Conclusion:

Although the number of cases in this series is small, it does show that anaemic gravid mothers are a group at risk and have to be watched carefully. There is no doubt that the presence of anaemia in pregnancy reduces the margin of safety for the mother and her foetus. Hence it is important to detect anaemia as early as possible. As a large proportion of cases are grande multipara, it is to this group of mothers that special attention should be turned. The prevention of anaemia in pregnancy involves elaborate programmes in health education, in increasing the nutritional status of the population, family planning and adequate antenatal care which includes a haemoglobin estimation at the first visit and again at 32 weeks of pregnancy.

The attainment of a high haemoglobin level during and after pregnancy not only ensures the woman a quicker recovery from childbirth but it also gives her more energy to resume her household duties and above all, to enjoy her motherhood.

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