

## Guidelines for Dietary Supplementation of Pregnant Women in a Rwandan Refugee Camp

Maj JRA Duckett

MB, ChB, MRCOG, RAMC

Senior Specialist Obstetrics and Gynaecology

23 Parachute Field Ambulance RAMC, Rhine Barracks, Aldershot, Hants GU11 2AX

**SUMMARY:** Units deployed on humanitarian aid may have little experience of the most appropriate interventions which can be expected to produce the most favourable population outcomes. Guidelines produced by UNICEF and the International Dispensary Association (IDA) can be used as a basis for planning. These guidelines were previously untested in Rwanda. This report focuses on iron and folate supplementation for pregnant women suggested by the IDA. The high levels of anaemia in pregnancy would suggest that supplementation is appropriate. However, before fully embracing the full set of recommendations, further field testing would be sensible.

### Introduction

In August 1994 23 Parachute Field Ambulance RAMC (23 Para Fd Amb) was deployed to Rwanda, Africa as part of the United Nations Aid Mission (UNAMIR). 23 Para Fd Amb personnel worked predominantly in refugee camps and were responsible for both the emergency care of the population and the reintroduction of primary care. As part of the mandate, antenatal and a limited intrapartum service was developed. There was a well structured level of medical care before the war but this infrastructure had been destroyed in the genocide. We decided on the most effective interventions for pregnant refugees using UNICEF and IDA guidelines (1,2). We tried to ascertain whether iron and folic acid supplementation was appropriate.

### Subjects and Methods

The study involved a prospective review of the haemoglobin levels of 100 consecutive patients booking at an antenatal clinic that was set up at the Kibeho refugee camp in South West Rwanda (population 70,000). In total five hundred patients were booked in 6 days. Kibeho and the surrounding area was 7,500ft above sea level which resulted in few of the patients suffering from haemoglobinopathies. The altitude would have resulted in sickle crisis and early death. However, malaria was endemic in the region of the camp. On registering at the clinic, women were given chloroquine sulphate 600mg stat, folic acid 5mg stat and a daily dose of ferrous sulphate 200mg. Pregnant refugees also qualified for extra food rations. The women attended on a weekly basis and were given new supplies at each attendance. The chloroquine was intended to reduce malarial parasitaemia and thus decrease the risk of pyrexia leading to abortion. Five ml of blood was taken for haemoglobin estimation during the first attendance at the antenatal clinic. This was processed at the Australian Military Hospital in Kigali (the capital city). The parity of the women and gestational age of the pregnancy was also estimated, with the aid of an interpreter. This proved to be quite problematic due to

difficulties with accurately translating parity and uncertainty about the date of the last menstrual period.

### Results

The mean age of the women (from the whole population of 556) was 28.9 years. The mean parity was 2.9, with 18% primigravid and 24% grandmultiples. One point two percent had 10 or more previous deliveries. The mean haemoglobin level of the sample was 110g/L (standard deviation 19.4). Using a level of 110g/L (normal non-pregnant female range 115-145g/L) as an indication of anaemia in pregnancy, 48% of the population fitted into this category (Fig 1). The mean gestation was 6.55 months (standard deviation 1.23).

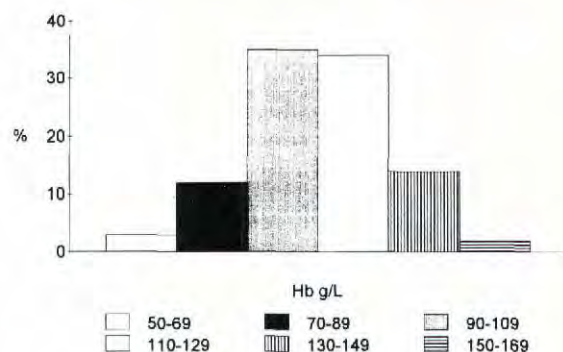


Fig 1. Haemoglobin Levels

### Discussion

In the British literature there has been some debate as to whether all pregnant women should receive iron and folate supplements or whether it should be limited to selected patients (3,4). The main causes of anaemia in Central and Eastern Africa have been elucidated in the past (5,6,7). These studies have identified malaria, iron deficiency and folate deficiency as the main factors.

Question Protected by copyright.

Ideally, we would have liked to have studied the aetiological factors in Rwanda but we did not have the resources to perform this task. Having identified the high prevalence of anaemia it would seem appropriate to use a blanket policy to treat the most likely causes. Withholding treatment in this situation, whilst trying to make specific diagnoses, would be inappropriate and would result in delayed and inefficient treatment. Therefore, we would suggest that health care professionals working with pregnant women in Rwanda, make every effort to supplement their diets with iron and folate, whilst providing chloroquine to reduce any malaria parasitaemia. However, there needs to be further testing of the full UNICEF recommendations to ensure that they are an appropriate use of both manpower and financial resources.

#### REFERENCES

1. Fisches techniques en sante maternelle et infantile. UNICEF 1994.

2. Basic unit: Treatment Guidelines. International Dispensary Association. P.O. Box 37098, 1030 AB Amsterdam, The Netherlands.
3. HIBBARD BM. Iron and folate supplements during pregnancy: supplementation is valuable only in selected patients. *Br Med J*, 1988; **297**: 1324-1326.
4. HORN E. Iron and folate supplements during pregnancy: supplementing everyone treats those at risk and is cost effective. *Br Med J*, 1988; **297**: 1325-1327.
5. FLEMMING AF. The aetiology of severe anaemia in pregnancy in Ndola, Zambia. *Ann Trop Med Parasitol*, 1989; **83**(1): 37-49.
6. ISAH HS, FLEMMING AF, Ujah, *et al*. Anaemia and iron status of pregnant and non-pregnant women in the guinea savanna of Nigeria. *Ann Trop Med Parasitol*, 1989; **79**(5): 485-93.
7. KALENGA MK, MUTACH K, NSUNGULA K, *et al*. Anaemia in pregnancy. Clinical and biological study. *Rev Fr Gynecol Obstet*, 1989; **84**(5): 393-9.