

## EFFECT OF UNIFERON F. IN ANAEMIA OF PREGNANCY\*

by

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Oral therapy in pregnancy, specially with iron preparations, will not suit some of the patients. Iron salts administered orally produce gastrointestinal disturbances of a mild to moderate degree (dose of elemental iron dependent) even in a normal individual. During pregnancy, specially in an anaemic individual, gastrointestinal disturbances like hyperemesis, epigastric discomfort, heartburn and diarrhoea are common. Hence, oral administration of iron preparations to an anaemic pregnant woman is not often suitable. Further, in our country pregnant women will attend ante-natal clinic usually after the 20th week of pregnancy, at times, after the 30th week. If a pregnant woman is found anaemic at that stage, oral therapy will not be convenient and the time will be too short to restore the haemoglobin level and to make up the body stores by the oral route. Hence, a need for a parenteral iron preparation.

The role of folic acid and its importance in rapid cell turn over, particularly in pregnancy, has been brought to the lime-light in recent

years (Stallworthy and Bourne, 1966). The advances in bio-chemical and micro-biological folic acid assay has helped the clinician to estimate serum folic acid requirements during pregnancy.

More interesting and thought provoking is the fact that folic acid deficiency produces foetal abnormalities, abortion (Hibbard, 1967) and accidental haemorrhage (Coyle and Geoghegan, 1962). In fact, in Europe and in the United States, prophylactic folic acid therapy is advocated (Giles and Burton, 1960; Lillie, 1962).

Hence, there is a need for an iron and folic acid preparation that can be administered parenterally during the last trimester of pregnancy. The efficacy of Uniferon F. intramuscularly in anaemia of pregnancy is investigated.

### *Material and Methods*

Thirty pregnant women with anaemia and haemoglobin levels varying from 20% to 58% were treated with Uniferon F.

Average weight of the patients was 42.2 kg. requiring 31.5 cc. of Uniferon F., on an average, in 18.2 days. Twenty-one out of 30 patients (70%) had associated hypoproteinaemia. On an average, the total serum proteins before treatment were 5.71 gms%, serum albumin 3.26 gms% and serum globulin 2.41 gms%.

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Nine out of 30 patients (30%) had hook-worm infection.

Uniferon F. was given according to the calculation (0.3 x body wt. of patient in lbs x (100-Hb% of patient) = ml. of Uniferon F.) Proteinose, 3 drams per day, was given in cases of hypoproteinaemia. Specific treatment with Neobidermin was given to all patients with hook-worm infection and they responded well.

In addition, all patients received supportive treatment with multivitamins, B. Complex and Vitamin C tablets, etc.

pose of proper diagnosis and treatment.

Response to therapy was assessed by doing estimation of haemoglobin percentage, packed cell volume, and reticulocyte count before treatment and also at weekly intervals for three weeks after commencing the treatment. A close watch was kept on the clinical condition of the patient and for evidence of reaction to parenteral iron folic acid therapy.

The minimum haemoglobin level as observed in these 30 cases before therapy was in the range of 20 to

TABLE I  
*Type of Hypochromic Anaemia*

Type of bone marrow	Microcytic anaemia		Macrocytic anaemia	
	No.	Percentage	No.	Percentage
1. Normoblastic	2	6.67%	7	23.33%
2. Megaloblastic	1	3.33%	20	66.67%
	3	10%	27	90%

Marrow puncture was done in all 30 cases. Only in 9 cases it was normoblastic, out of which in 2, the peripheral smear was microcytic and in seven macrocytic. In the remaining 21 cases, the bone marrow smear was megaloblastic. And even here although the morphology was macrocytic in 20 cases, it was microcytic in 1 case. This depicts, therefore, that even though the 30 cases were hypochromic, pure iron deficiency was evident only in 2 cases and in the remaining 28 cases it was dimorphic in nature. This stresses again the need for folic acid, along with iron therapy. Further, the importance of routine smears as well as bone marrow puncture is evident for the pur-

58%, and the maximum value after treatment was in the range of 50.5% to 71%. Hence, the average increase in the hemoglobin was 20%. The P.C.V. values also were 11 to 27%, before and 23% to 32%, after treatment, the average increase being 8.4%.

Noting the average increase in Hb% per day according to the type of anaemia, it was better in the dimorphic variety as compared to iron deficiency anaemia. This difference in response not only depicts that dimorphic type is more common, but also stresses that addition of folic acid to iron therapy may account for the better response in dimorphic anaemias.

TABLE II  
Results

	Hb %	Level Gms%	P.C.V. %	Reticulocyte count %
1. Minimal value before treatment ..	20%	2.9 Gms%	11%	0.6%
2. Minimal value on an average before treatment ..	30.5%	4.42 Gms%	15.23%	1%
3. Maximum value before treatment ..	58%	8.41 Gms%	27%	2%
4. Minimal value after treatment ..	30%	4.35 Gms%	14%	1%
5. Maximum value on an average after treatment ..	50.5%	7.32 Gms%	23.63%	6%
6. Maximum value after treatment ..	71%	10.3 Gms%	32%	9%
7. Average increase in the value during three weeks ..	20%	2.9 Gms%	8.4%	5%

TABLE III  
Increase in Haemoglobin level

	Average increase in Hb per day percentage	Total increase in Hb in 3 weeks
Iron deficiency anaemia .. ..	0.8 %	2.4 Gms%
Dimorphic anaemia .. ..	1.3 %	3.3 Gms%

*Side effects*

Vomiting .. ..	3
Itching .. ..	2
Giddiness .. ..	1
Fever .. ..	1
Diarrhoea .. ..	1

All the patients complained of a bearable degree of pain at the site of injection for the first 5 or 6 injections only. Three patients vomited 5 to 10 times after the injection of Uniferon F. Vomiting was relieved by an injection of Siquil, 1 cc. None of the patients developed joint pains, rashes or urinary symptoms.

*Discussion:*

It is interesting to note that 27 patients (90%) had dimorphic anaemia. This stresses the fact that in the majority of the pregnant women, the anaemia is of the dimorphic type,

indirectly meaning that folic acid deficiency is common during pregnancy. Further, the average increase in haemoglobin percentage per day is 0.8% in iron deficiency anaemia and 1.3% in dimorphic anaemia. These results further established the need for folic acid in the treatment of pregnant women suffering from dimorphic anaemia.

It is significant to note that none of the 30 patients developed urinary complications, rashes or joint pains during therapy with Uniferon F. Further, only 3 patients had vomiting which was controlled by Siquil. Only one patient developed fever, which may probably be coincidental.

Summing up, this trial establishes the high degree of tolerance and acceptability of a parenteral iron-folic acid preparation.

### Summary

Thirty anaemic pregnant women were treated with Uniferon F.i.m. 90% of them had dimorphic anaemia. The treatment resulted in an average daily increase of 1.3% of Hb. A high degree of tolerance, acceptability and lack of any serious side effects noticed during the trial, places Uniferon F.i.m. as the parenteral preparation of choice for iron-folic acid therapy.

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