OFFICE OF THE COMMISSIONER OF HEALTH & FAMILY WELFARE AND MISSION DIRECTOR (NHM), TS::HYDERABAD

Rc.No.344/NHM/MHN/AMB/2017 **Date: 14.06.2021**

CIRCULAR

Sub:- CH&FW – MHN – Fighting Anemia – Use of Intravenous Iron Sucrose therapy among pregnant women with moderate anemia – Guidelines issued – Reg

Ref:-
1. This office circular No.290/MHN/MCP-Cards/2017 dt.12.01.2021
2. National guidelines on prevention of anemia and recommendations of State gynecologists expert committee on use of intravenous iron sucrose in pregnant women with moderate anemia

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The State has achieved a significant reduction in the maternal mortality rate by 63 per one lakh live births (SRS 2016-18). However, PPH and PIH still continue to be the leading causes of maternal deaths and the indirect cause being anaemia in Telangana State. Further, 53% of the pregnant women are anaemic and the consumption of Iron Folic Acid is as low as 53% (NFHS V). The program data also reports that around 64% of anaemic cases with 57% and 7% of the pregnant women presenting with mild and moderate anaemia respectively.

To address this issue, vide ref 1 cited, the State had issued guidelines to prevent and treat mild anaemia with IFA supplementation via Directly Observed Therapy (IFA-DOT).

Vide ref 2 cited, the State adapted the national guidelines with specific reference to administration of intravenous iron sucrose for prevention and management of moderate anaemia. These guidelines were recommended and reviewed by the technical experts (Gynaecologists) from (4) Tertiary care hospitals and (2) secondary care facilities as detailed below.

S.No	Name of the Committee Member	Designation	Name of the Facility
1	Dr. Rayjyalakshmi	Superintendent, HOD, Ob/Gy	Government Maternity Hospital, Sulthan Bazar
2	Dr. Mahalakshmi	Professor and HOD, Ob/Gy	Gandhi Hospital
3	Dr.Rajeshwari	Professor and HOD, Ob/Gy	Niloufer Hospital
4	Dr. Malathi	Professor, Ob/Gy	MGMH, Petlaburz
5	Dr. Suneela	Professor, Ob/Gy	Niloufer Hospital
6	Dr. Sunitha	CSS (Ob/Gy)	Area Hospital, Nampally
7	Dr. Jalaja Veronica	CSS (Ob/Gy)	DH, King Koti
8	Dr.Suryashree	Sr.PO, MHN	O/o CH&FW

The overall aim of these guidelines is to provide guidance to health care providers at all levels of facilities (TH, DH, AH, CHC and PHC) on administration of intravenous iron sucrose to pregnant women with moderate anemia.

In order to identify women with moderate anemia, the health care providers shall conduct Hb tests for every pregnant woman and categorize them into mild, moderate and severe anemia cases based on their HB%. A separate line list and a register (format enclosed) shall also be maintained for pregnant women put on IV Iron sucrose.

The State aims to reduce anaemia among pregnant women from the current 53% to 32% by 2022. In order to achieve this, the district officials shall ensure strict compliance of these guidelines.

Encl: 1) Guidelines for use of intravenous iron sucrose among pregnant women with moderate anemia
2) Format for iron sucrose register

Commissioner, Health and Family Welfare

To
All the District Medical & Health Officers in the State
All the Medical Superintendents of TVVP facilities
All the Medical Superintendents of DME facilities

Copy to
The Director of Medical Education, TS, Hyderabad
The Commissioner, TVVP, TS, Hyderabad
The Director of Public Health & Family Welfare, TS, Hyderabad

ANNEXURE 1: GUIDELINES FOR USE OF INTRAVENOUS IRON SUCROSE AMONG PREGNANT WOMEN WITH MODERATE ANEMIA

I. **Classification of Anaemia**: Hemoglobin (Hb) measurement is a standard test among pregnant women during to evaluate the Hb levels. Based on the Hb levels, the women are categorized as below:

Category	Hb%
Very Severe Anaemia	<4 gms/dl
Severe Anaemia	<7 gms/dl
Moderate Anaemia	7 - 8.9 gms/dl
Mild Anaemia	9.0 – 10.9 gms/dl
No Anaemia	>11 gms/dl

II. **When to check for Hb%:** Check Hb% at registration, and at every visit of the pregnant woman to the facility to modify the treatment protocol if needed

1. If Hb% is 9 to 10 gms - 2 tabs oral IFA daily + diet rich in protein iron and vitamin C + Tab Folic acid 5 mg one + Tab B12 one + Tab Vitamin C one
2. one hr after lunch and one hr after dinner for 360 days.
3. If Hb% is 11 gms, 1 tab of oral Iron daily, one hr after lunch or dinner for 360 days.
4. If Hb less than 11 GMs two tabs of IFA + one Tab B12, + Tab Vit C in addition to the diet rich in protein, iron and Vitamin C.

Note: Ensure if one Tab Albendazole is administered in the 2nd trimester.

III. **Indications for Intravenous Iron Sucrose Therapy:**

If the woman presents with the following conditions, then administer Intravenous Iron Sucrose. However, taking informed consent before administering Iron Sucrose is essential.

1. **At 4 months**, if Hb% is < 7 gms administer IV Iron Sucrose
2. **At 5 months**, if Hb% is < 9 gms administer IV Iron Sucrose
3. Intolerance to oral iron
4. Poor compliance/ lack of response to oral iron therapy
5. Inadequate absorption due to gastrointestinal disorders
6. Pregnant women with severe IDA, presenting late in pregnancy
7. As the first line therapy in cases of moderate and severe Iron deficiency anemia in second and third trimester of pregnancy
8. Post-partum anemia

IV. Consideration of IV Iron Sucrose

IV iron sucrose should be considered only when Hb levels are above 7 gm %. In case of 7 gm % and below, blood transfusion should be considered.

	Gestation Period			
Hb level (gm%)	**14-16 wks**	**20-24 wks**	**26-30 wks**	**30-34 wks**
< 7	Blood Transfusion at CEmOC	Blood Transfusion at CEmOC	Blood Transfusion at CEmOC	Blood Transfusion at CEmOC
7.1 - 8.9	IFA therapeutic/ supplemental dose	Consider IV iron sucrose	First time IV iron sucrose and top up doses if given earlier	First time IV iron sucrose and top up doses if given earlier / Blood transfusion
9 to 10.9	IFA therapeutic/ supplemental dose	IFA therapeutic/ supplemental dose	IFA therapeutic/ supplemental dose	IV iron sucrose first time or top up doses if given earleir
11 and above	IFA therapeutic/ supplemental dose	IFA preventive dose	IFA preventive dose	IFA preventive dose

Indications for packed cell transfusion:

1. Hb < 5 gms even without failure at any gestational age
2. Acute bleeding < 6 gms or haemodynamically unstable due to ongoing bleeding at any gestational age
3. Complaints suggestive of failure such as shortness of breath,+ Pulse rate > 100 + Respiration rate > 24 breaths/ minute
4. If complaints suggestive of failure with Hb 7 gms at any gestational age
5. Hb 7 gms and requiring major surgery like c-section or cesarean hysterectomy
6. Hb< 7 gms and gestational age above or equal to 34 weeks in labour.

Note: All non-emergency cases with Hb≤7 gms must have initial lab investigations before correction such as:

1. CBP peripheral smear
2. Reticulocyte count
3. Serum Creatinine
4. ALT AST
5. CUE

All cases of refractory anaemia must have full work-up at district or tertiary care hospital.

Involve anesthetist in decision making for blood / packed cell transfusion.

V. **Availability of Iron Sucrose:** It is available as 2.5 ml & 5ml single dose ampoules. One ampoule of 2.5 ml contains 50 mg and one ampoule of 5 ml contains 100 mg of elemental iron.

The district officials must ensure continuous supply of Inj. Iron Sucrose to all facilities based on the need and the line listed moderate pregnant women.

VI. Dosage Calculation:

1. Administration of IV Iron sucrose is based on total Iron deficit
2. Total dose in mg = **Body Wt in the first trimester. X (Target Hb* - Actual Hb) X 2.4**
3. This is followed by 10 mg/ Kg body weight to replenish the Iron stores (500 mg if body weight is 50 kg, 1000 mg if body weight s more than 50kg).
4. The body weight here is pre pregnancy body weight, the target Hb is measured in gm/litre, and 0.24 is a correction factor that takes into account the patient's blood volume, estimated at 7% of body weight and Haemoglobin iron content; Since we are measuring Hb in g/dl or gm % in routine measurements, the correction factor is adjusted to 0.24 X 10 = 2.4.

* The target is to reach Hb >11 gms before delivery and maintain through post-partum period.

The hemoglobin level of the pregnant woman should be checked 4 and 6 weeks after administration of iron sucrose. If there is no change in hemoglobin levels at the end of IV iron sucrose treatment, other causes of anemia should be investigated.

VII. Administration:

1. Stop oral iron tablets 2 days before infusion and start IFA two days after the infusion
2. No test dose required
3. Intravenous Iron sucrose is administered by intravenous Infusion
4. The infusion is administered as every 2.5 ml Iron Sucrose diluted exclusively in a maximum of 100 ml of 0.9% NaCl, immediately prior to infusion. The initial drip rate should be slow for the first 5 minutes 5 ml/ minute and later 100 ml/30 minutes.
   Example: To give 100 mg of elemental iron, two ampoules of 2.5 ml or one ampoule of 5 ml should be diluted in 100 ml NS and this should be infused over the period of 30 minutes. Unused diluted solution must be discarded.
5. Maximum dose: A maximum dose of 1600 mg (8 ampules of 200 mg elemental iron) can be given in 4 or 6 weeks. One dose of 200 mg should be given in 100 ml NS. This should be infused over 30 minutes, can be given 1-3 times per week or on alternate days.
6. **A total dose of 1.0 gm can be given in 4-10 sittings (over a period of 1 month).**

VIII. Supervision while administering IV Iron Sucrose

1. IV Iron Sucrose should be given under proper supervision
2. At least a doctor should be available while giving it. This is required to handle anaphylactic shock.
3. Close monitoring is required to observe the rate of infusion and patient vitals, especially the pulse rate and blood pressure. Monitor pulse rate, respiration rate and BP before and after infusion. Watch for complaints such as chest pain during infusion, breathing problem. In such case, immediate action to be taken – STOP the infusion, check vitals and treat.
4. An emergency tray containing Inj. Adrenaline (should be given 1:1000 dilution 0.5 ml IM), inj. Hydrocortisone 200 g IV and Oxygen should be available for management of anaphylactic reactions.

IX. **Refractory cases:** If Hb levels do not improve after 3-4 weeks of therapy, the cause of anemia should be re-evaluated. For a non-iron deficiency anemia, the cause should be treated and blood transfusion should be considered. Also, for a refractory iron deficiency anemia blood transfusion should be considered.

Annexure 2: Format for Iron Sucrose Register

Register for Administration of Intravenous Iron Sucrose														
S.No	Name of the pregnant women	Mobile no	Age	LMP	EDD	Hb% on the day of starting IV Iron Sucrose	1st dose	2nd dose	3rd dose	4th dose	5th dose	Hb% after one month of final dose of IV Iron Sucrose	Follow-up done by PHN/HV/ANM/ ASHA	Name and contact details of PHN/HV/ANM/ASHA
1														
2														
3														
4														
5														
6														
7														
8														
9														
10														