

OTHER ACTIVITIES

4.4 Determination of Micronutrient Deficiency Disorders among Pregnant women and their association with the outcome of the pregnancy with respect to LBW babies - A hospital based study (ICMR Fellowship Project)

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OBJECTIVES

1. To determine the level of following micronutrients in blood samples of pregnant women of 3rd trimester
 - Hematological: Hb, Iron, Ferritin, Folic acid, B12
 - Vitamins: A, E, C
 - Trace elements: Zn, Se, Cu
 - Hormones: T3, T4, & TSH
 - Urine Iodine Excretion level
 - Salt Iodine
2. To determine the association of LBW babies with micronutrient deficiencies of 3rd trimester pregnant women
3. Dietary Intake of micronutrients in 3rd trimester of pregnant women

PROGRESS

This project has been initiated and sampling has been done. Recommendation of Ethics Committee by DMRC and Dr. S.N. Medical College, Jodhpur has been taken. Rapport has been established with the Department of Gynecology & Obstetrics, Umaid Hospital, Jodhpur. The schedules were prepared in detail and pre tested. Finally field work has been started.

Recruitment of pregnant mothers: All the pregnant women of 3rd trimester attending the Ummaid Hospital (Government hospital) of Jodhpur district has been enrolled and data has been collected from 76 pregnant women of 3rd trimester.

Exclusion criteria- Pregnant women of 1st and 2nd trimester and all the pregnant women suffering from chronic diseases are excluded from the study. Those pregnant women who are intending to deliver elsewhere have also been excluded from the study.

All the registered pregnant women of 3rd trimester have been interviewed / examined for the following nutritional deficiency signs

- Signs of anaemia (platinichia and koilonichia),
- Night blindness,
- Bitot Spot, and
- Goiter by examining the thyroid gland using the standard method as recommended by the joint WHO / UNICEF / ICCIDD.

Dietary intake and Anthropometry: Using 24 hour dietary recall method, dietary intake has been collected from 76 enrolled women. Birth weight, Recumbent length & Head circumference of 26 new born babies of the enrolled pregnant women have been taken within 48 hours adopting WHO method.

Collection of samples:

Blood: Each subject has been given a code number that was also the same on the collection tube, cryotube and prescribed form. Blood samples (venous blood 5 ml) have been collected in two tubes i.e. EDTA Tube and SST tubes from all 76 enrolled pregnant women. 20 µl of blood have been spotted on filter paper (Whatmen No. 1). Serum and plasma has been separated in the DMRC lab following the standard procedure.

Urine: A casual urine sample has been collected from 76 registered pregnant women for estimation of Urinary Iodine Excretion (UIE) levels to assess the Iodine nutriture status.

Salt: Sample of 20 gm. salt consumed in their families have been collected in auto seal LDPE pouches. Iodine content of salt sample will be estimated using standard iodometric titration method. Salt samples having iodine content less than 15 ppm will be classified as with inadequate iodine.

Transportation of sample: WHO Manual has been followed up for transportation of blood samples from hospital to DMRC, Jodhpur and CNRT lab, Delhi. Cold chain has been maintained for their transportation.

The distribution of the 76 pregnant women of 3rd trimester collected so far has been shown in Table 1. Table 2 shows the distribution of 76 pregnant women of 3rd trimester according to anaemia on the basis of haemoglobin estimation and revealed that 17.1 percent pregnant women were non-anaemic, whereas 82.9 percent were anaemic. The percentage belonging to severe anaemia was 3.9 percent.

Table 1. Distribution of pregnant women according to duration of Months

Duration of Pregnancy	No. of Pregnant Women	Percentage
Seven	13	17.1
Eight	42	55.3
Nine	21	27.6
Total	76	100

Table 2. Distribution of women according to anaemia (Haemoglobin Estimation)

Pregnant Women	Non-anemic		Anemic					
	Normal (≥ 11 g/dl)		Mild (10-11 g/dl)		Moderate (7-10 g/dl)		Severe (<7 g/dl)	
	N	%	N	%	N	%	N	%
Pregnant N = 76	13	17.1	27	35.6	33	43.4	3	3.9

Out of 76 registered women, 26 deliveries have been followed with in 48 hours till now. It was observed that 46.2 percent deliveries were normal whereas 53.2 percent were Cesarean.

The project is going on. The seventy six samples of serum and plasma are in the process of transportation to CNRT lab, New Delhi for estimation of Iron, Ferritin, Folic acid, B12, Vitamins: A, E, C, Trace elements: Zn, Se, Cu, Hormones: T3, T4, & TSH. Other parameters viz UIE and Salt iodine are still to be analyzed at DMRC, Jodhpur. Analysis of Dietary Intake of micronutrients in 3rd trimester of pregnant women and determination of the association of LBW babies with micronutrient deficiencies of 3rd trimester pregnant women is to be done.