"CO-RELATION OF MATERNAL HYPOTHYROIDISM AND INFANT OUTCOME: A PROSPECTIVE STUDY."

By

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ABBREVIATIONS

ATA	:	American thyroid association
TSH	:	Thyroid Stimulating Hormone
T3	:	Tri iodo tyronine
T4	:	Tetra iodo tyronine
OH	:	Overt Hypothyroidism
SCH	:	Subclinical Hypothyroidism
HCG	:	Human Chorionic Gonadotropin
PIH	:	Pregnancy induced hypertension
IUGR	:	Intra uterine growth restriction
PPROM	:	Preterm premature rupture of membranes
PROM	:	Premature rupture of membranes
LBW	:	Low birth weight
GDM	:	Gestational diabetes mellitus
HTN	:	Hypertension
PPH	:	Postpartum Haemorrhage

ABSTRACT

Background: Thyroid disorders are the second most common endocrinological disorders in pregnancy. This study aimed to assess the maternal hypothyroidism on the infant outcome.

Methodology: This prospective observational study was conducted among the pregnant mothers screened for hypothyroidism after 28weeks of gestation with a diagnosis of hypothyroidism. Serum TSH levels was estimated and if it was deranged then free T4 (fT4) levels estimated patients were managed accordingly and followed till delivery. Term neonates born to mothers with hypothyroidism were included in the study, thyroid functions of these babies was assessed at 72 hours of life.

Result: In present study, total of 138 pregnant mothers were included after taking informed consent. The mean age of participants was found to be 26.20±4.24yrs. Among them majority were in the age group of 19-25yrs (47.1%), followed with 26-30yrs of age (40.6%) and 12.3% were in age of 31-40yrs. Majority of newborn in the age of 2.5-3.0kg (71.0%) and 26.8% with weight of 3.1-3.5kg. The higher TSH was seen among the newborn born to mothers who are untreated for the thyroid disorder (18.5%) compared to the infants born to mothers treated for thyroid disorder (3.8%).($p<0.05$) .

On telephonic assessment the milestones achieved among the infants born to treated group of mothers for thyroid disorder, all the newborn achieved the milestones appropriate to the months assessed from 1st month to 4th month of birth. However in the mothers inadequately treated for the thyroid disorders, there was reduced activity of reach out for familiar person at 3-4th month of life (14.8%).

Conclusion: In this study we found that there is no significant correlation between maternal and neonatal thyroid levels.

This prospective study suggest that subclinical hypothyroidism mothers who were adequately treated compared with inadequately treated mothers, may have mild adverse effects on some of the developmental milestones of the child. However long term follow up of these infants is required.

The clinical implications are limited, but the observed difference suggest that the control of thyroid function during pregnancy may be an important determinant of early neurodevelopment.

Keyword: Subclinical hypothyroidism, Overt hypothyroidism, Neonate, Outcome, TSH, Thyroid hormone.

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INTRODUCTION

Thyroid problems are the second most prevalent endocrinological problem during pregnancy. In major Indian cities, the frequency of hypothyroidism among pregnant women is 13.13 percent;[1] Karnataka 10.95% and in rural population of Belgaum district 16.6%.[2]; KAHER'S DR.KLE'S Prabhakar kore charitable hospital 6.9% Hypothyroidism is mostly caused by a thyroid malfunction, however hypothalamic dysfunction may also play a role in a few cases. Iodine deficiency, autoimmune thyroid disease, or hashimotto's thyroiditis are the most prevalent causes of hypothyroidism in pregnant or postpartum women.[3]

Overt, untreated maternal hypothyroidism has been associated with an increased risk of abortion, fetal growth restriction, stillbirth, low birth weight, prematurity, admissions to neonatal intensive care unit, perinatal mortality, fetal thyrotoxicosis, fetal hypothyroidism, neurophysiological and cognitive impairment.
Pregnancy affects thyroid function in a variety of ways. The maternal hypothalamic-pituitary-thyroid (HPT) axis undergoes a series of modifications, but the foetus develops its own HPT axis, and the placenta plays an active role in iodide and T4 transport and metabolism. During pregnancy, an integrated three-compartment thyroid model occurs. Pregnancy physiological changes in the thyroid gland boost thyroid hormone production by 40-100 percent to suit maternal and foetal demands.[4,5] The changes that occur in the maternal thyroid gland during pregnancy include: 1. a 10% increase in thyroid size, and 2. a 50% rise in the daily iodide demand. Increase in thyroxine (T4) and triiodothyronine (T3) synthesis by 50%, as well as an increase in thyroid hormone binding protein and the generation of thyroid stimulators. Thyroid hormone is required for optimal placental development. There is evidence that

defective early placentation causes preeclampsia, placental abruption, and premature labour. During early neurodevelopment, thyroid hormone is also vital for neuronal migration, synaptic transmission, and myelination.

In pregnancy, there is increased demand for the maternal thyroid hormones by the developing in utero fetus.[4] Until roughly 12 weeks of gestation, the growing foetus cannot create its own thyroid hormones. These maternal thyroid hormones are vital throughout the first trimester period for the fetus's optimal neurodevelopment. These pregnancy needs place an additional strain on the maternal thyroid.

It is critical that hypothyroidism be discovered early in pregnancy and treated as soon as possible. If a pregnant woman has a history of hypothyroidism, correct titration of thyroid drugs throughout pregnancy is critical. It is a thrill for every woman in the world to be pregnant and successfully bear their child. A normal functioning thyroid is critical for a woman's journey through pregnancy and a favourable pregnancy outcome.

There are paucities in availability of studies to assess the maternal hypothyroidism and its outcome in the infant thyroid out-come on the day 3 and follow-up at 4^{th} month of the life. In view of the same, current study is designed to assess the infant thyroid outcome in hypothyroid mothers.

OBJECTIVE

Aim:

Aimed to assess the maternal hypothyroidism and the infant outcome.

Objectives:

- Primary objective: correlation of maternal and infant thyroid levels at day 3 of life.
- Secondary objective: To assess developmental milestones in infants born to mothers with hypothyroidism upto age of 4 months.

REVIEW OF LITERATURE

Thyroid is an essential endocrine gland in our bodies. It secretes tri-iodothyronine (T3), thyroxine (T4), and calcitonin, a calcium-regulating hormone. These hormones serve a critical role in maintaining regular body metabolism and calcium homeostasis, which is required for optimal psychosexual development.[6] Thyroid dysfunction, particularly hypothyroidism, is the most prevalent endocrine condition in the world's population. It is also a big worry for pregnant women since thyroid disorders are associated with poor maternal and perinatal outcomes.[6,7]

Incidence

The frequency of overt hypothyroidism ranges from 0.1 to 2 per cent in population surveys.[8–10] Subclinical hypothyroidism incidences is higher, ranging from 4 to 10 percent of adults, likely with a higher occurrence in older women. However, in older patients, there is an age-related change towards higher TSH concentrations, and thus, if age-adjusted standard ranges are used, the prevalence does not increase with the age. Hypothyroidism is 5 to 8 times more prevalent in women than in men and is more prevalent in women with small body sizes at birth and during infancy.[9,11]

Hypothyroidism prevalence in India is 11%, compared to just 2% in the UK and 4·6% in the US. Hypothyroidism is one of the most common forms of hormonal dysfunction resulting from the deficiency of thyroid hormone or its impaired activity.[12] Among 42 million people suffering from thyroid diseases in India, hypothyroidism is the commonest.

According to western research, the incidence of thyroid disease in pregnant women is around 2.5 percent. Overt hypothyroidism (OH) affects around 0.3-0.5

percent of pregnant women, whereas subclinical hypothyroidism affects approximately 2-2.5 percent of pregnant women (SCH).[13–15] In comparison, the prevalence statistics from our Indian literature revealed that the prevalence of hypothyroidism among pregnant women in India was between 4.8- 11 percent.[16,17]

Anatomy & thyroid gland Development

The name of the thyroid (thyreos- shield, eidosform) was derived from Greek. It is made up of two lobes that are connected by an isthmus. It is located between the cricoid cartilage and the suprasternal notch, anterior to the trachea. The standard thyroid measurements are 12–20 g. The thyroid gland arises during the third week of gestation from the floor of the primitive pharynx.

In the third week of gestation, thyroid activity is measurable. The thyroid is derived mainly from the endoderm. The ventral part of the 4th pharyngeal pouch will develop into the lateral lobes of the thyroid. In up to 55% of patients, the pyramidal lobe originates from the migration of the thyroglossal duct descending from the pharynx at the foramen cecum of the tongue and connecting to the thyroid isthmus. After its descent, the thyroglossal duct is normally obliterated. If it remains patentable, a thyroglossal duct cyst can develop in the patient.[18,19]

There are many anatomical differences in the form and nature of the thyroid gland. Conditions such as thyroiditis, malignancy, goitre, substernal goitre, hypothyroidism, prior cervical surgery, and prior ablation of radioiodine can significantly distort, expand, or reduce the anatomical boundaries of the thyroid gland and/or obscure it.

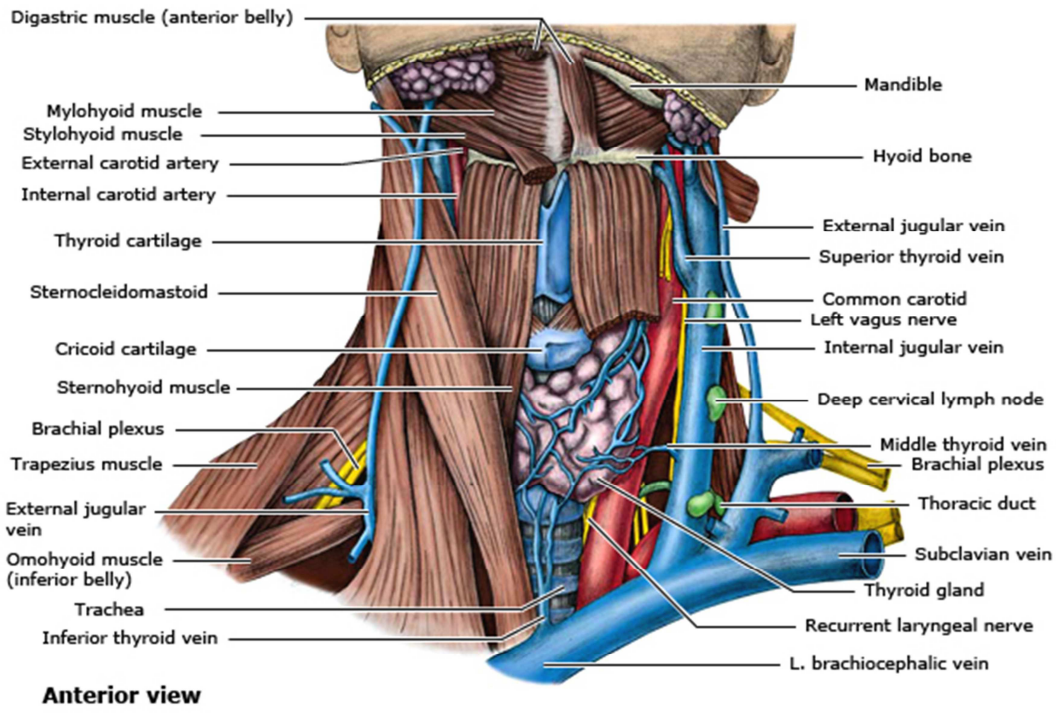


Figure 1: Anatomy of thyroid gland

Thyroid lobes: The thyroid is divided into two portions or lobes, which are joined by the thyroid isthmus. The thyroid lobes extend superiorly from the isthmus to the middle thyroid cartilage and laterally to the common carotid arteries. The lobes are divided into upper and lower poles. The thyroid lobes can be flat or spherical, but since they curve around the trachea posteriorly, they frequently assume a three-dimensional shape.

Histology

The gland is made up of densely packed spherical units (follicles) connected by a dense network of capillaries. The interior of the follicle is filled with a translucent, proteinaceous colloid that is the primary component of the thyroid's overall mass.

Thyroid tissue appears as tightly packed, ring-shaped structures in cross-section, with a single layer of thyroid cells enclosing a lumen. The follicle diameter varies greatly, even within a single gland, but is typically around 200 m. The height of follicular cells varies with the degree of glandular stimulation, becoming columnar when active and cuboid when dormant. The epithelium rests on a glycoprotein-rich basement membrane that separates the follicular cells from the surrounding capillaries. From 20 to 40 follicles are delimited by connective tissue septa to create a lobule fed by a single artery. A given lobule's function may differ from that of its neighbours.

Under electron microscopy, the thyroid follicular epithelium displays numerous traits in common with other secretory cells and some that are unique to the thyroid. From the tip of the follicular cell, many microvilli extend into the colloid. Iodination, exocytosis, and the initial stage of hormone secretion, namely colloid resorption, occur at or near the surface of the cell.

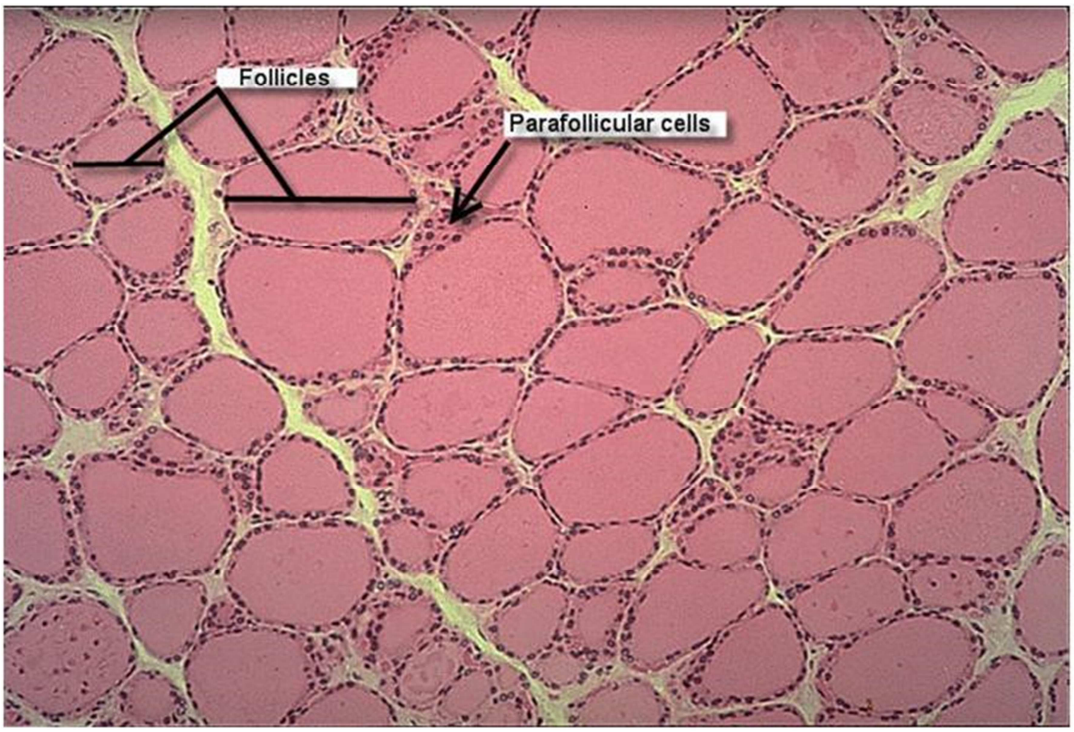


Figure 2: Histology of thyroid gland[20]

The thyroid also contains parafollicular cells (C cells), which produce the calcium-lowering hormone calcitonin. These cells emerge from the last pair of pharyngeal pouches during embryonic development and eventually settle among follicular epithelial cells or in the thyroid interstitium.

Vascular supply:

• Right and left superior and inferior thyroid arteries, originating from the external carotid arteries and thyrocervical trunk, respectively, feed the thyroid gland with arterial blood.

The venous drainage system is made up of the

- Superior, middle, and inferior thyroid veins that drain into the internal jugular vein and innominate vein

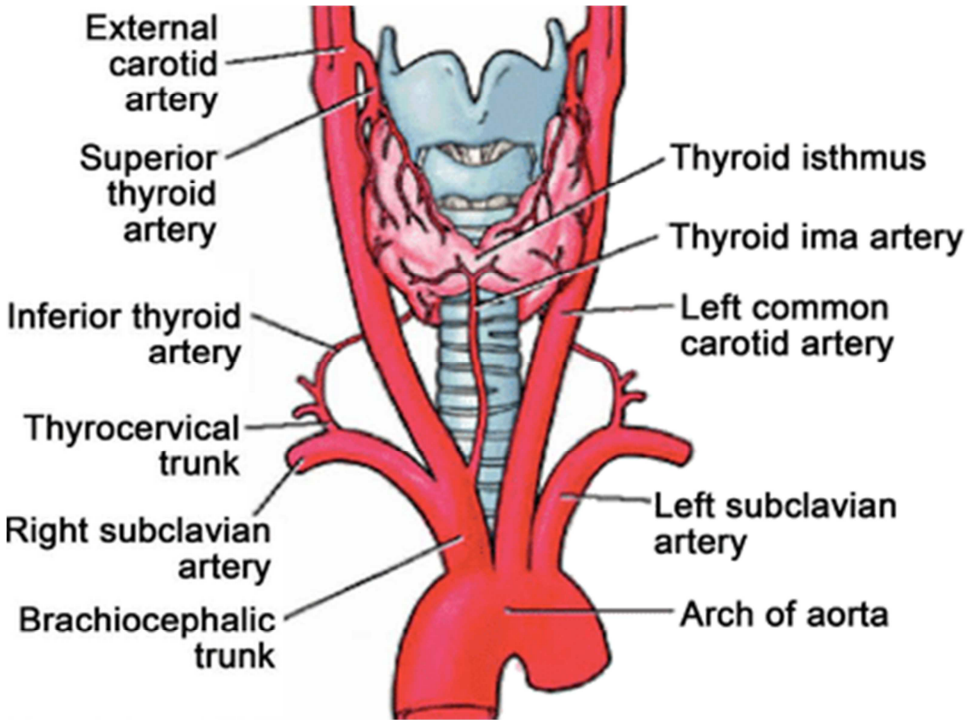


Figure 3: Thyroid gland blood supply[20]

Thyroid hormones

There are two thyroid hormones that are biologically active: thyroxine (T4) and 3,5,3'-triiodothyronine (T3) (figure 1). They are composed of a phenyl ring attached to a tyrosine molecule via an ether connexion. On their tyrosine (inner) ring, both have two iodine atoms. They vary in that T4 has on its phenyl (outer) ring two iodine atoms, while T3 has only one. If an iodine atom is extracted from the inner ring of T4, the compound formed is 3,3',5'-triiodothyronine (reverse T3[rT3]), which has no biological activity.

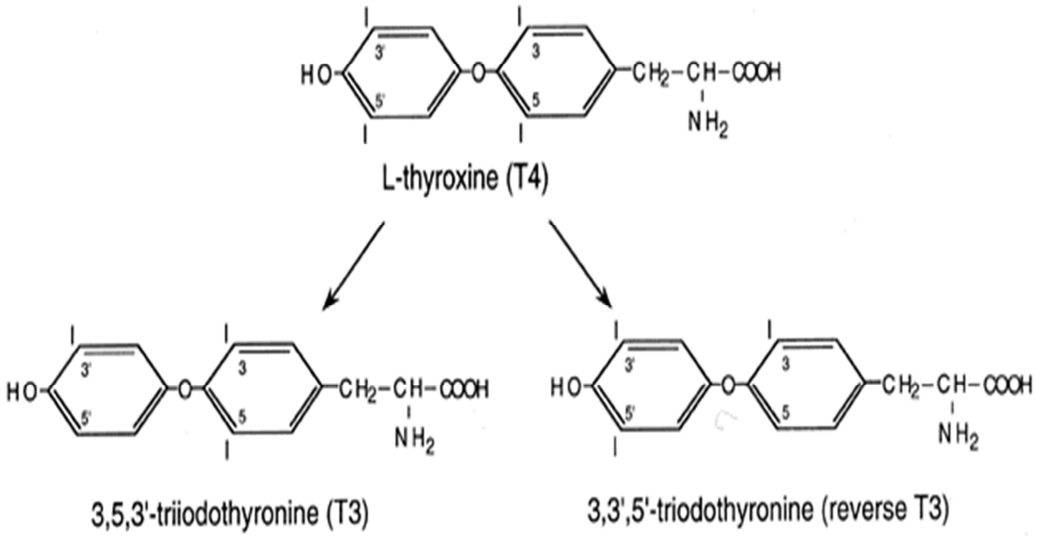


Figure 4: Structure of thyroid hormone

T4 is a product of the thyroid gland only, while T3 is a product of the thyroid gland and of many other tissues in which T4 deiodination is made. The thyroid gland contains significant amounts of thyroglobulin-incorporated T4 and T3, the protein inside which all hormones are synthesised and processed. This mechanism allows the gland to secrete T4 and T3 rapidly.

Iodine is required for regular thyroid function and can only be gained by the consumption of foods that contain it or have it added to them. According to the Food and Nutrition Council, National Academy of Medicine [formerly the Institute of Medicine], the recommended daily intake for infants 0 to 6 months is 110 mcg; infants 7 to 12 months, 130 mcg; children 1 to 8 years, 90 mcg; children 9 to 13 years, 120 mcg; teenagers and adults, 150 mcg; pregnant women, 220 mcg; lactating women, 290 mcg.

Thyroid hormone biosynthesis

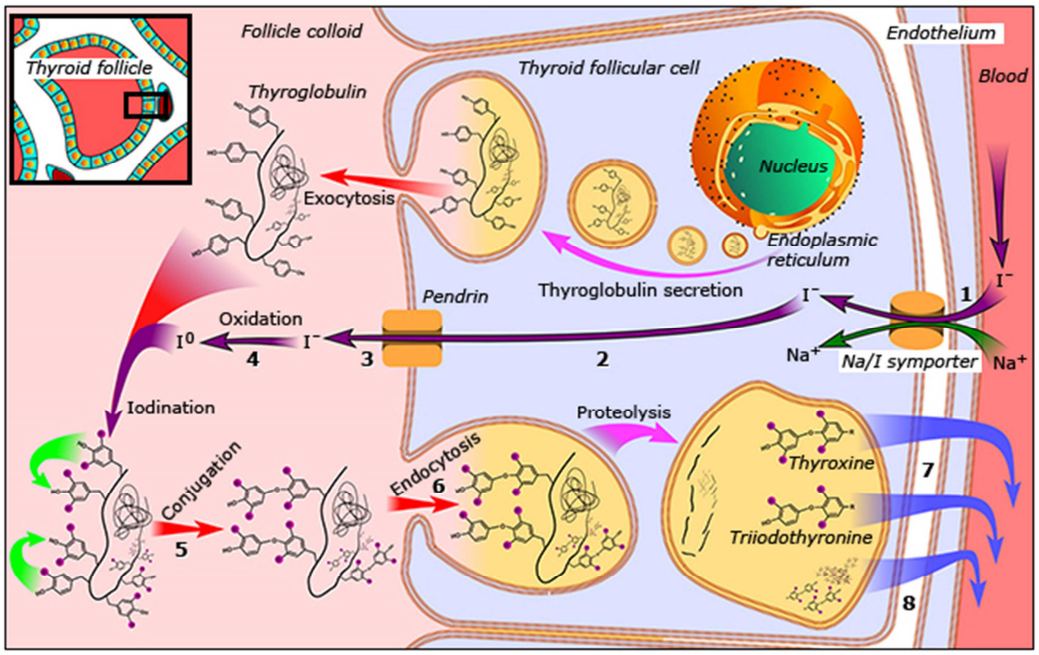


Figure 5: Steps involved in Biosynthesis of thyroid hormone

Thyroid hormone synthesis includes the following steps, marked by numbers in the diagram above:

(1) I– trapping by the thyroid follicular cells.

(2) Diffusion of I– to the apex of the cells.

(3) Transport of I– into the colloid.

(4) Oxidation of inorganic iodide to I– by TPO and incorporation of I– into tyrosine residues with thyroglobulin molecules in the colloid. DUOX2 and DUOXA2 are required for generation of hydrogen peroxide, a substrate for TPO.

(5) Combination of 2 DIT molecules to form T4 or of MIT with DIT to form T3.

(6) Uptake of thyroglobulin from the colloid into the follicular cell by endocytosis, fusion of the thyroglobulin with a lysosome, and proteolysis and release of T4, T3, DIT, and MIT.

(7) T4 and T3 Release into the circulation.

(8) DIT and MIT Deiodination to yield tyrosine.

T3 is also produced in the thyroid and peripheral tissues by the monodeiodination of T4.

Thyroid hormone regulation

TRH induces TSH secretion, which encourages the thyroid gland to produce and release T3 and T4. T3 and T4 both directly and indirectly decrease TSH secretion by suppressing TRH release. T4 is converted to T3 in the liver and many other tissues by the action of T4 monodeiodinases. In the liver, some T4 and T3 are conjugated with glucuronide and sulphate, expelled in bile, and partially hydrolyzed in the gut. Some T4 and T3 generated in the gut may be reabsorbed. Drug interactions can occur at any of these locations.

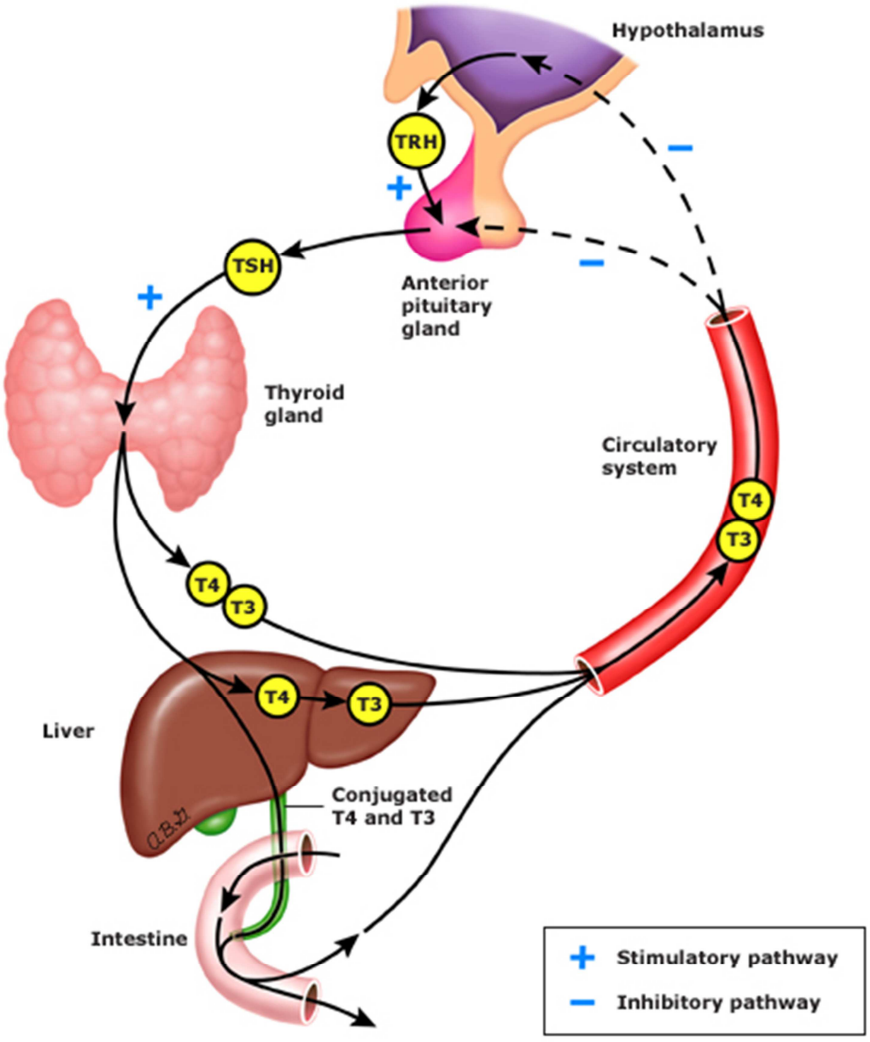


Figure 6: Regulation of thyroid hormone production

The hypothalamus recognises low circulating levels of thyroid hormone (triiodothyronine (T3) and thyroxine (T4) and produces thyrotropin-releasing hormone as a result (TRH). TRH, in turn, stimulates the pituitary gland, causing the production of thyroid-stimulating hormone (TSH) until blood levels return to normal. Thyroid hormone exerts negative feedback control on both the hypothalamus and the anterior pituitary gland, hence regulating the release of both TRH from the hypothalamus and TSH from the anterior pituitary gland.

Mechanism:

Thyroid hormones (T3) enter the cell and bind to thyroid receptors (TR) located in the nucleus. T4 can attach to thyroid receptors as well, albeit not as strongly. After then, the hormone receptor complex attaches to DNA. The binding allows for the production or repression of a variety of genes that code for enzymes that govern cell activity.

Thyroid Disorders – Hypothyroidism[21]

The most common endocrine disorder arising from hormone deficiency is hypothyroidism. Depending on the time of onset it may be divided into congenital and acquired. According to the level of endocrine dysfunction it can be either primary or secondary. Based on severity it can be mild or subclinical and severe or clinical hypothyroidism. The distinction between subclinical and clinical hypothyroidism is of utmost significance. In clinical hypothyroidism symptoms are grave, while in subclinical they are mild or may even be non-existent. The diagnosis is made by measurement of blood levels of thyroid hormones.[22]

Because traditional clinical signs are imprecise, the diagnosis of hypothyroidism is primarily reliant on laboratory testing. Primary hypothyroidism is distinguished by a high serum thyroid stimulating hormone (TSH) concentration and a low serum free thyroxine concentration (T4). Subclinical hypothyroidism in the face of increased TSH levels is biochemically defined as normal free T4 levels. Secondary (central) hypothyroidism is distinguished by low serum T4 levels and abnormally increased serum TSH levels.

The prevalence of overt hypothyroidism in community samples ranges from 0.1 to 2 per cent. The incidence of subclinical hypothyroidism in older women is higher, ranging from 4% to 10% of adults, likely with a higher frequency. However, there is an age-related change in older patients toward higher TSH levels, and thus, if standard age-adjusted ranges are used, the prevalence does not increase with old age.[8–10,23] In India, hypothyroidism is a frequent health problem. However, there is a lack of data on the prevalence of hypothyroidism in India's adult population. Iodine deficiency in the diet is the most prevalent cause of hypothyroidism worldwide. Despite this, Hashimoto's thyroiditis, an autoimmune condition, is the leading cause of hypothyroidism in the industrialised world. India appears to be transitioning from an iodine deficit to an iodine sufficiency condition, with the majority of families (83.2 percent urban and 66.1 percent rural) currently ingesting enough iodized salt. Hypothyroidism in India was earlier categorized under the group of iodine deficient disorders. In 2004, a WHO assessment of global iodine status classified India as having optimal iodine nutrition.[24]

Causes of hypothyroidism can be divided as follows:

Primary:

1. Hashimoto's thyroiditis:
    a. With goiter.
    b. “Idiopathic” thyroid atrophy, presumably end-stage autoimmune thyroid disease, following either Hashimoto's thyroiditis or Grave’s disease.
    c. Neonatal hypothyroidism due to placental transmission of TSH-R blocking antibodies.

2. Radioactive iodine therapy for Grave's disease.

3. Subtotal thyroidectomy for Graves' disease or nodular goiter.

4. Excessive iodide intake (kelp, radio contrast dyes).

5. Sub-acute thyroiditis.

6. Rare causes in theUSA:

a. Iodide deficiency.

b. Other goitrogens such as lithium; anti-thyroid drug therapy.

c. Inborn errors of thyroid hormone synthesis

Secondary:

Hypopituitarism due to pituitary adenoma, pituitary ablative therapy, or pituitary destruction.

Tertiary:

a. Hypothalamic dysfunction (rare).

b. Peripheral resistance to the action of thyroid hormone.

Clinical features: The clinical symptoms of hypothyroidism are extremely variable, depending on the starting age and the extent and severity of the deficiency of thyroid hormone. Tiredness, cold aversion, weight gain, constipation, dry skin, myalgia, and menstrual irregularities are typical symptoms of thyroid hormone deficiency. Symptoms appear depending on the severity of hypothyroidism. This may be related to the extent of alteration in biochemical parameters. The manifestations

are minimal during commencement, and it may be indistinguishable from those of euthyroid patients. Symptoms are evaluated when they develop newly, or when a worsening of already existing symptoms is observed. Congestive pericarditis, heart failure, pleural effusion, intestinal obstruction as well as coagulation disorders are all manifestations of severe hypothyroidism. Neurologic signs may develop later such as ataxia, seizures, depression, psychosis, and coma.

Clinical symptoms and signs[20]	Hoarseness
Fatigue	Goitre
Cold intolerance	Periorbital oedema
Constipation	Weight gain
Impaired memory	Galactorrhoea
Slowed mental processing	Laboratory test abnormalities
Depression	Hypercholesterolaemia
Nerve entrapment syndromes	Hyponatraemia
Ataxia	Hyperprolactinaemia
Muscle weakness	Hyperhomocysteinaemia
Muscle cramps	Anemia
Menstrual disturbance	Creatine phosphokinase elevation
Infertility	Radiological abnormalities
Bradycardia	Pericardial and pleural effusions
Diastolic hypertension	Pituitary gland enlargement

Physiological changes in thyroid metabolism in pregnancy

Thyroid illness diagnosis during pregnancy necessitates a grasp of the changes in thyroid physiology and thyroid function tests that occur throughout normal pregnancy.

Thyroid physiology changes throughout a normal pregnancy to suit the increased metabolic demands, as seen by variations in thyroid function tests.[25] The following are the key alterations in thyroid function that occur during pregnancy:

- A rise in serum thyroxine-binding globulin levels (TBG)
- Human chorionic gonadotropin stimulates the thyrotropin (thyroid-stimulating hormone [TSH]) receptor (hCG)

Thyroxine-binding globulin: Serum TBG concentrations nearly double during pregnancy because estrogen stimulates TBG synthesis and sialylation, resulting in impaired TBG clearance [2]. To maintain adequate free thyroid hormone concentrations during this time, the thyroid gland's production of thyroxine (T4) and triiodothyronine (T3) must increase. TBG excess causes a rise in serum total T4 and T3 concentrations but not in free T4 and T3 concentrations. Total T4 and T3 levels grow by roughly 50% during the first half of pregnancy, plateauing at around 20 weeks of gestation, when a new steady state is reached and the overall production rate of thyroid hormones returns to pre-pregnancy levels.

hCG and thyroid function — Human chorionic gonadotropin (hCG) is a glycoprotein hormone that, like TSH, has a common alpha subunit and a distinct beta subunit. The beta subunits of hCG and TSH, on the other hand, share a lot of similarities. As a result, hCG has only a minor thyroid-stimulating effect. As an

example, 1 micro U of hCG was comparable to 0.0013 microU of TSH in a human thyroid cell culture test.[26,27]

Serum hCG concentrations rise quickly after conception and peak between 10 and 12 weeks. Total serum T4 and T3 concentrations rise throughout this period. Serum free T4 and T3 concentrations rise modestly, usually within the normal range, while serum TSH levels fall appropriately. Serum TSH values are transiently low or undetectable in 10 to 20% of normal women.[28–30] TSH was 0.2 microU/mL in 67 percent of samples in a study of 63 women with exceptionally high hCG concentrations (>200,000 international units/L), while free T4 was above 1.8 ng/dL in 32 percent of samples. TSH levels were lowered in all women with hCG levels greater than 400,000 international units/L. Multiple pregnancies (twins, triplets, etc.) and hyperemesis gravidarum can result in extremely high levels of hCG.[31]

Trimester specific thyroid hormone reference range

Because of the changes in thyroid physiology that occur during pregnancy, the American Thyroid Association (ATA) Guidelines for the Diagnosis and Management of Thyroid Disease During Pregnancy and the Postpartum recommend using population-based, trimester-specific TSH and assay method reference ranges, as well as trimester-specific serum free T4 reference ranges. Unfortunately, many commercial laboratories currently do not provide these reference ranges. When trimester-specific free T4 reference ranges are unavailable and free T4 levels appear to be at odds with TSH, total T4 measurement may be superior than free T4 testing.

In the lack of population and trimester-specific normal ranges, ATA guidelines recommend the following for thyroid function test interpretation:[32]

- Weeks 7–12 – Lower the lower limit of the TSH reference range by about 0.4 mU/L and raise the upper limit by approximately 0.5 mU/L (corresponding to a TSH reference range of approximately 0.1 to 4 mU/L).
- TSH levels should progressively return to pre-pregnancy levels throughout the second and third trimesters.
- Beginning in week 7, the upper reference range for total T4 increases by approximately 5% every week. At roughly 16 weeks of pregnancy, total T4 (and T3) levels are 1.5-fold higher than in non-pregnant women (due to TBG excess).

The degree of the decrease in the TSH reference range during pregnancy varies by racial and ethnic group.[31,33] In one of the largest population-based studies (nearly 13,000 pregnant women), the reference range for TSH in the first trimester (2.5th to 97.5th percentile) was 0.08 to 2.99 mU/L.[34,35] Other studies in different groups, however, indicate a relatively modest fall in TSH upper limit of normal of only 0.5 to 1.0 mU/L. The lower limit of the reference range for TSH in healthy pregnant women during the first trimester ranged from 0.03 to 0.1 mU/L in numerous demographic studies.[34–38]

Iodine requirement

Pregnant women have higher iodine requirements than nonpregnant women, due to both an increase in maternal T4 production required to maintain maternal euthyroidism and an increase in renal iodine clearance. Severe maternal iodine insufficiency during pregnancy causes a decrease in maternal T4 production, insufficient placental transfer of maternal T4, and fetal neurologic development damage. Excessive iodine consumption, on the other hand, might cause prenatal hypothyroidism and goiter.

The World Health Organization (WHO) recommends 250 mcg of iodine per day during pregnancy and breastfeeding. During pregnancy and breastfeeding, the National Academy of Medicine (formerly the Institute of Medicine) recommends 220 mcg and 290 mcg of iodine per day, respectively. To achieve this level of daily intake, the ATA recommends supplementing with 150 mcg of iodine daily during pregnancy and lactation for women in the United States, which is the dose included in the majority of prenatal vitamins marketed in the United States, though pregnant women should verify the iodine content of their own prenatal vitamin.[39]

In addition to the thyroid gland's physiological changes, there is an increase in urine iodine excretion during pregnancy. This condition develops as a result of enhanced iodine plasma clearance and a high glomerular filtration rate during pregnancy. As a result, the body's iodine reserves are depleted. However, there is a decrease in circulating thyroid hormone levels in women who have a borderline or insufficient iodine reserve. This results in hypothyroidism as well as an increase in thyroid stimulating hormone.

Diagnosis of neonatal hypothyroidism

Newborn screening- Ideally, universal screening should be performed from 3-4 days of age to detect Congenital Hypothyroidism. Cord blood can also be used as an alternative. Many countries of the world, including Western Europe, North America, Japan, Australia, and sections of Eastern Europe, Asia, South America, and Central America, are now undergoing universal newborn screening. For screening, three techniques are used:

1. Primary TSH, back up T4

2. Primary T4, back up TSH

3. Concomitant T4 and TSH

The first method involves measuring TSH first. T4 is only tested if TSH is more than 20mu/L. This method is likely to overlook central hypothyroidism, thyroid binding globulin deficiency, and hypothyroxinema with delayed TSH rise. T4 is evaluated first in the second method, and if it is low, TSH is also checked. This is likely to overlook milder/subclinical instances of Congenital Hypothyroidism in which T4 is initially normal but TSH is increased.

Concurrent measurement of T4 and TSH is the most sensitive method, but it is also the most expensive.[40]

Abnormal values on screening (T4 < 6.5 ug/dL, TSH > 20mu/L) should always be confirmed by a venous sample (using age appropriate cut-offs) before initiating treatment. Among infants with proven Congenital Hypothyroidism, TSH is >50 mu/L in 90% and T4 is < 6.5 ug/dL in 75% of cases.

In the absence of universal screening, the newborns with the following indications should be screened:

1. Family history of Congenital Hypothyroidism

2. History of thyroid disease or anti-thyroid medicine intake in mother

3. Other factors linked with a greater frequency of Congenital Hypothyroidism include Down's syndrome, trisomy 18, neural tube abnormalities, congenital heart

disease, metabolic disorders, familial autoimmune illnesses, and Pierre-Robbins syndrome.

Thyroid function tests should be performed on any newborn who exhibits hypothyroidism symptoms such as persistent jaundice, constipation, poor feeding, umbilical hernia, macroglossia, wide open posterior fontanel, and edematous and dry skin.

Approach for screening

If the serum TSH is between the trimester specific lower limit of normal and 2.5mU/L, most women required no further testing

If the serum TSH is >2.5mU/L, measure for TPO antibodies

If the TSH is >4mU/L, measure for free T4 to determine the degree of hypothyroidism.

Management of pregnant women with or at risk of hypothyroidism,

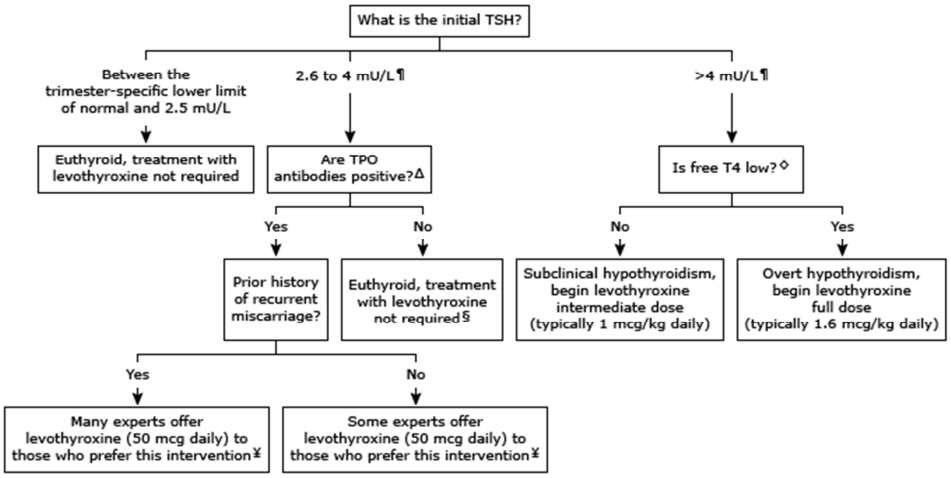


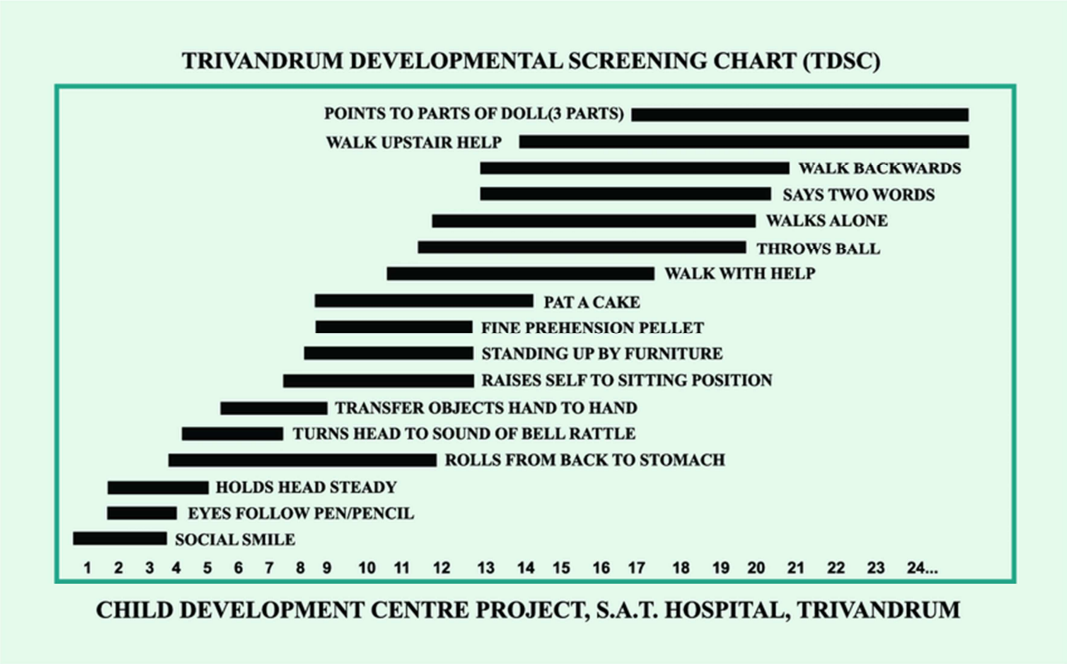
Figure 7: Management algorithm according to American Thyroid Association (ATA).

Developmental milestones

The term development delay is used when a child's development lags behind established normal ranges (norms) for his or her age in areas of motor, cognitive, language, behavioral, emotional, or social development delay among children of less than 3years of age is often identified only by professionals, when they are brought for medical advice for other reasons. At the community level, these children are usually not identified due to the lack of a simple tool that can be used by community health worker. Early detection of development delay is important for instituting community based intervention program as possible in an effort to prevent onward progression to disability.

Trivandrum Developmental Screening Chart (TDSC) was designed and developed the Child Development Centre, SAT Hospital, Medical College, Trivandrum. Initially seventeen test items were carefully chosen after repeated trial and error method so as to include adequate mental and motor developmental milestones spread over the first 2 years of age. Care was taken to include items for testing hearing and visual functions. There is an over representation of items near one year of age because that is an ideal age for formal developmental assessment in a community setting. The range for each test items was taken from the norms given in Bayley Scales of Infants Development (Baroda norms).[2] The left hand side of each horizontal dark line represents age at which 3% of children passed the item and the right end represent the item in the Baroda sample. A vertical line is drawn or a pencil is kept vertical line is drawn or a pencil is kept vertically at the level of the chronological age of the child being tested. It the child fails to achieve any item that falls short on the left side the vertical line, the child is considered to have developmental delay. Any obvious abnormality or asymmetry is also considered

abnormal. The term development delay is used when a child's development lags behind established normal ranges (Norms) for his or her age in areas of motor, cognitive, language, behavioral, emotional, or social development delay among children of less than 3 years of age is often identified only by professionals, when they are brought for medical advice for other reasons. At the community level these children are usually not identified due to the lack of a simple tool that can be used by community health worker. Early detection of development delay is important for instituting community based intervention program as possible in an effort to prevent onward progression to disability.



Similar articles in review of hypothesis

In a prospective case-control study conducted by Blazer S et.al, (2003) investigated the pituitary–thyroid axis function in the early neonatal period of newborns to hypothyroid mothers who have been apparently adequately treated. In their study they concluded that impaired intrauterine growth and the unduly elevated serum values of TSH and serum free T4 found in a substantial fraction of the study newborns might reflect an insufficient level of hormone replacement therapy of their hypothyroid mothers during pregnancy, despite an assumed adequate management.[41]

A retrospective study conducted by Idris I et.al, (2005) to investigate outcome in patients with hypothyroidism during early and late gestation in 167 pregnancies managed at antenatal endocrine clinic. They concluded that Thyroxine dose requirement increases during pregnancy and thus close monitoring of thyroid function with appropriate adjustment of thyroxine dose to maintain a normal serum TSH level is necessary throughout gestation. Maternal hypothyroidism at presentation and in the third trimester may increase the risk of low birth-weight and the likelihood for caesarean section.[42]

In a prospective study conducted by Wolfber A et.al, (2005) assessing the obstetric and neonatal outcomes associated with maternal hypothyroid disease in the outpatient department in a tertiary care hospital. They concluded that the hypothyroidism in mothers during the pregnancy influences the fetus growth and fetal thyroid hormone production. This has got significant influence on the maternal outcome, newborn outcome and the milestones achievement.[43]

In a prospective study by Wikner B et.al, (2008) assessed maternal use of thyroid hormone during pregnancy and neonatal outcome in 9866 womens. They concluded that women taking substitute thyroid hormones during pregnancy are at

increased risk of some pregnancy complications, but their infants are affected to only a slight degree.[44]

In a retrospective study by Tudosa R et al (2010) conducted to assess the maternal and fetal complications of hypothyroidism related pregnancy. Concluded that an increased prevalence of maternal and fetal complications during labor and childbirth in hypothyroid women. appropriate, early administered treatment and maintenance of the normal level of thyroid hormone minimize the risk of maternal and fetal complications. [45]

In a prospective study conducted by Chen LM et al., (2014) to assess the adverse maternal outcome and perinatal complications with maternal overt hypothyroidism. The study found that compared to euthyroid state, subclinical hypothyroidism and hypothyroidism were associated with higher rate of gestational hypertension, prelabor rupture of membranes, intrauterine growth restriction, and low birth weight. Study concluded that SCH was associated with higher rates of PIH,PROM, and their fetuses and infants had increased risks of IUGR and LBW.[46]

In prospective cross-sectional study by Patwari M et al., (2016) to study the thyroid profile in pregnancy with perinatal outcome. They concluded that there is a significant association between thyroid disorders and adverse perinatal outcome.[47]

In a prospective observational study conducted by Sharma D et al (2017) to assess the maternal and perinatal outcome in hypothyroidism in pregnancy. The most common obstetric complication observed was preeclampsia and most common fetal complication was preterm delivery in hypothyroid pregnancy. It was recommended that routine screening for thyroid dysfunctions in pregnancy due to the high

prevalence of thyroid dysfunctions in Indian pregnant women and their association with various adverse pregnancy-related complications.[48]

In study prospective study by Sreelatha et al (2017) to study the maternal and fetal outcome in pregnant women with thyroid disorder. They concluded that Subclinical hypothyroidism in pregnancy was associated with abortions(2.1%), Anaemia (4.2%), PIH(14.7%), GDM(4.2%), Preterm labour(3.1%), Oligohydramnios (16.67%), LSCS (22.9%), PPH(6.3%), LBW(21.9%), Hyperbilirubinemia(9.4%), NICU admission (14.6%).[49]

In a clinical review conducted by Sreelatha S et al., (2018) The adverse pregnancy outcomes include, miscarriage, pregnancy induced hypertension, and its more severe form pre-eclampsia, as well as placental abruption, anaemia, post partum hemorrhage, and increased fetal morbidity and mortality. The study concluded that early and effective treatment of thyroid disorders ensures safe pregnancy with minimal maternal and fetal complication, as fetus needs thyroxine for brain development, growth and lung maturation.[50]

In a prospective observational study by Shravani MR et.al, (2018) assessed maternal hypothyroidism and neonatal outcome in 106 neonates born to mothers with hypothyroidism, they assessed thyroid hormone levels in newborns after 72hr of life. They concluded that all the babies had a normal TSH and T4 levels which was probably because of early diagnosis and timely initiation of treatment to the mothers with hypothyroidism.[51]

In a study conducted by Singh A et al., (2018) to assess the prevalence of hypothyroidism in pregnancy. Forty eight out of 700 pregnant mothers screened had

the thyroid disorder in them. The hypothyroidism was found to be in 6.8%, affecting age group 21-30yrs. Fetal distress was most common indication for the cesarean section in the study and perinatal mortality rate was found to be 5.5% in the hypothyroid mother. They study concluded that, routine screening for thyroid hormone status and early confirmation of diagnosis and prompt treatment will benefits for better maternal and fetal outcome. It is difficult to diagnose hypothyroidism clinically in pregnancy due to non specific presenting features which may be masked by existing obstetric symptoms.[52]

In a prospective study by Vaishali R et al., (2018) to study the prevalence of thyroid dysfunction in pregnant women in Maharashtra. Study concluded that, the prevalence of thyroid dysfunction in pregnancy is high even in rural population. The prevalence of thyroid dysfunction in the present study is 13.9%. Of this, prevalence of hypothyroidism is 12.76% and that of hyperthyroidism is 1.13%. This study concludes that there is high prevalence of thyroid dysfunction in pregnancy even in rural population. Thus a universal screening helps in early diagnosis and preventing the aftermaths of thyroid dysfunction in pregnancy.[53]

In a population based cohort study conducted by Turunen S et.al, (2018) to assess Pregnancy and Perinatal Outcome Among Hypothyroid Mothers on population cohort study between the years 2004-2013, included 16364 pregnant women. Maternal hypothyroidism was associated with several pregnancy and perinatal complications, including gestational diabetes mellitus, gestational hypertension, severe preeclampsia, cesarean section, preterm births, large-for-gestational age newborn, major congenital anomalies, and neonatal intensive care unit admission. They concluded that Maternal hypothyroidism is associated with several pregnancy

and perinatal complications, but consistent LT4 use may reduce many of the risks.[54]

A systematic review conducted by Shinohara D et.al, (2018) to assess Pregnancy Complications Associated With Maternal Hypothyroidism between 2002-2013 with six reviewers independently selected the studies. The most prevalent complications associated with maternal hypothyroidism were abortion, intrauterine fetal death, preterm delivery, and preeclampsia. The pregnancy outcome depended on the treatment that was received by the patient. They concluded that maternal hypothyroidism has a important role in the outcome of the healthy newborn and the proper development of the milestones at the appropriate age.[55]

In a prospective observational study by Pengoria R et.al, (2019) evaluating the neonatal outcome in maternal hypothyroidism in 150 antenatal term women with hypothyroidism. They concluded that adequately controlled maternal hypothyroidism in early gestation does not lead to an increased risk of maternal and neonatal complications and normal brain development. Therefore universal screening for all pregnant women as a part of routine antenatal care should be practiced to avert long term consequences.[56]

In a cohort study by Turunen S et al., (2019) to assess the pregnancy and perinatal outcome among the hypothyroid mothers. The maternal hypothyroidism was associated with several pregnancy and perinatal complications including the diabetes mellitus, gestational hypertension, sever pre-eclampsia, cesarean section, preterm births, NICU admission. Study concluded that Maternal hypothyroidism is associated with several pregnancy and perinatal complications, but consistent LT4 use may reduce many of the risks.[54]

In a prospective random cross-sectional study by Maurya P et al., (2019) to assess the maternal and foetal outcome in pregnant women with thyroid disorder. There are 25 cases of hypothyroidism and 16 cases of hyperthyroidism in pregnancy out of 400 cases. Complications associated with thyroid dysfunction included abortions (14.63 percent), maternal anaemia (9.7 percent), pre-eclampsia (12.2 percent), preterm labor (9.76 percent), abruption placenta (4.88 percent), IUGR (2.4 percent), and still birth (7.32 percent). Out of 41 patients with thyroid dysfunction, foetal complications seen were hyperbilirubinemia (12.2 percent), Foetal distress (4.88 percent), NICU admission (17.07 percent) and low birth weight (21.95 percent). Thyroid disorder in pregnancy have adverse effects on maternal and foetal outcome emphasizing the importance of routine antenatal thyroid screening. [57]

In a retrospective cohort study Wu M-Q et al., (2019) to study the impact of subclinical hypothyroidism on adverse perinatal outcome and role of thyroid screening in pregnancy. Study concluded that SCH conferred an increased risk of Hypertensive disorders of pregnancy, particularly in women diagnosed with the disorder in the first and second trimesters.[58]

In a prospective observational study by Mahadik K et al., (2020) to assess the thyroid function in pregnancy and its feto-maternal outcome. Prevalence of thyroid disorders was found with 11% subclinical hypothyroidism, overt hypothyroidism and subclinical hyperthyroidism occurring in 5.6, 3.5 and 1.5% of the pregnant mothers respectively. The women with SCH and overt hypothyroidism, anemia was present in 26.3%. with respect to the fetal outcome, LBW was seen in 31.6%, NICU admissions 42.1%, low APGAR score in 21.1%. Risk of anemia, Low Birth weight, NICU admissions, and low APGAR score was 4.8, 6.3, 0.14 and 3.64 times higher

respectively in women with hypothyroidism than in women who are euthyroid. Prevalence of subclinical hypothyroidism is 5.6% in 3rd trimester of pregnancy. Anemia, pre-eclampsia, high caesarean rates and neonatal morbidities is significantly associated with hypothyroidism.[59]

In a cross-sectional retrospective study conducted by Kiran Z et al., (2021) to assess the neonatal outcomes and congenital anomalies in pregnant women with hypothyroidism. In our group of 662 live births, newborn jaundice was the most prevalent neonatal outcome (37.6 percent). Although nearly 15% required intensive care unit hospitalization, infant death was extremely rare. Cardiovascular problems were the most prevalent clinically severe congenital abnormality, while Mongolian spots were the most commonly reported congenital disease. There is a statistically significant link between low birth weight and congenital abnormalities in women who had hypothyroidism prior to pregnancy. [60]

In a cross-sectional retrospective study conducted by Kiran Z et al., (2021) to assess the association of thyroid antibody status on the maternal and neonatal outcome in pregnant women with hypothyroidism. In total, 146 of 718 instances were included in the final analysis. Thyroid peroxidase antibodies were positive in 66.4 percent of cases, anti-thyroglobulin antibodies were positive in 52.1 percent of cases, and both antibodies were positive in 43.8 percent of cases. Thyroid autoimmunity was found to be substantially related with pre-gestational diabetes. Thyroid autoimmune groups had a 73 percent lower risk of gestational hypertension. Maternal (chronic) hypertension and gestational diabetes were revealed to have an independent effect on postpartum hemorrhage. Premature birth was demonstrated to be an independent risk factor for hypertensive problems throughout pregnancy. Positive thyroid antibodies were found

in 4.7 percent of hypothyroid pregnant women, with a stronger correlation with pre-gestational diabetes. In thyroid autoimmune groups, gestational hypertension was the least likely to occur. None of the outcomes were shown to be independently related to poorer outcomes.[61]

MATERIALS AND METHODS

Source of Data

The main source of data for the study is patients from the teaching hospitals attached to KAHER'S DR. Prabhakar kore charitable hospital attached to J.N medical college. All pregnant mothers screened for hypothyroidism after 28 weeks of gestation with a diagnosis of hypothyroidism were included in the study

Term newborn babies of these mothers were included in the study

Study design : Prospective Observational Study.

Study setting : KAHER'S DR. Prabhakar kore charitable hospital, attached to J.N Medical College.

Duration of data collection: 1 year 3 months

Study Period: January 2020- March 2021

Sample size: for confidence of 95% and allowable error of 10% to estimate a relative risk of two, the estimated sample size is calculated as 138 in each group were recruited for the study.(16)

Equation

Sample size $n = [DEFF*Np(1-p)]/ [(d^2/Z^2_{1-\alpha/2}*(N-1)+p*(1-p)]$

Inclusion criteria: -

- Singleton pregnancies whose mothers are diagnosed as hypothyroidism after 28 weeks of gestation
- Term Infants born to these mothers with hypothroidism

Exclusion criteria:-

- Mother Known case of hypothroidism/hyperthyroidism on treatment prior to pregnancy

- Multifetal gestation.
- Known chronic disorders like diabetes and hypertension, liver disorders, renal disorders
- Previous bad obstetric history with known cause.
- Infants born with Congenital anamolies
- Preterm infants and sick infants
- Birth asphyxia

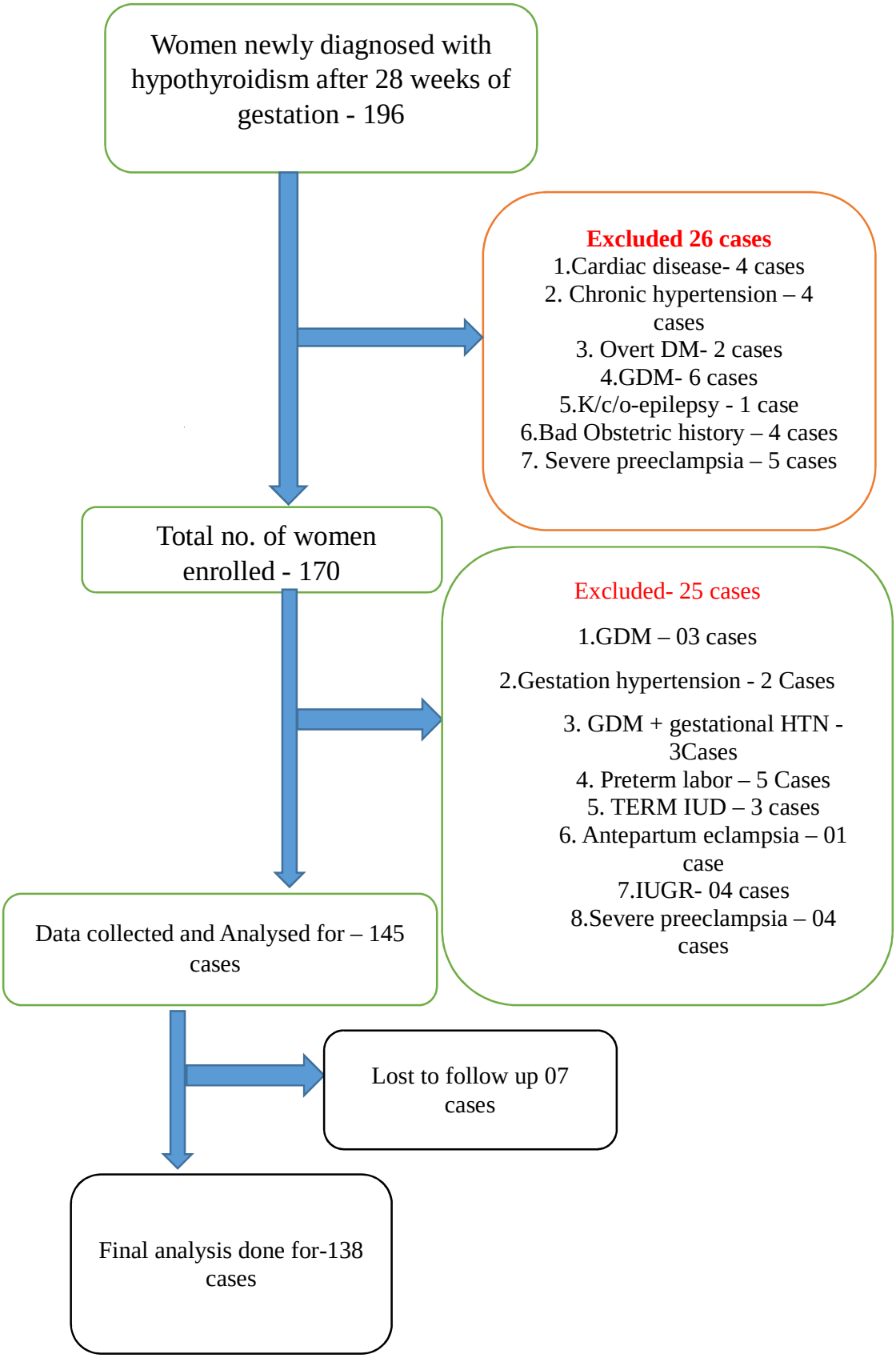
METHODOLOGY:

Pregnant women attending antenatal out-patient department, admitted in labor room and diagnosed as hypothyroidism in third trimester at KAHER'S Dr. Prabhakar Kore charitable hospital attached to J.N Medical College and fulfilling inclusion criteria were enrolled in the study after institutional ethics approval and consent from study subjects.

Serum TSH levels was estimated and if it was deranged then patients were managed accordingly and followed till delivery. Term neonates born to mothers with hypothyroidism were included in the study, thyroid functions of these babies was assessed at 72 hours of life. A developmental milestone of these babies was assessed up to 4 months of age by using Trivandrum developmental screening chart. Follow up of these babies was carried out at day 3 and 4 months of age at high risk clinic.

STATISTICAL ANALYSIS

The data obtained was recorded in MS excel work sheet and statistical analysis will be done using IBM SPSS v23 programme running on windows operating system. Categorical variables were presented in terms of percentage, frequency and proportions. The continuous variables were expressed as Mean and standard deviation and for non-normal continuous variables median and IQR was used for description. The continuous variables were represented using histogram plot while categorical variables were represented in simple bar charts, cluster bar charts and pie charts. The significance of mean difference between two independent groups was analysed using students t-Test for continuous variables or Mann-Whitney U test based on the normality assumption and chi-square test or Fisher's exact test when variables are categorical. The strength of association between variables was assessed using Pearson's correlation test. p-value of <.05 was considered statistically significant.


Women newly diagnosed with hypothyroidism after 28 weeks of gestation - 196
Excluded 26 cases
1.Cardiac disease- 4 cases
2. Chronic hypertension – 4 cases
3. Overt DM- 2 cases
4.GDM- 6 cases
5.K/c/o-epilepsy - 1 case
6.Bad Obstetric history – 4 cases
7. Severe preeclampsia – 5 cases
Total no. of women enrolled - 170
Excluded- 25 cases
1.GDM – 03 cases
2.Gestation hypertension - 2 Cases
3. GDM + gestational HTN - 3Cases
4. Preterm labor – 5 Cases
5. TERM IUD – 3 cases
6. Antepartum eclampsia – 01 case
7.IUGR- 04 cases
8.Severe preeclampsia – 04 cases
Data collected and Analysed for – 145 cases
Lost to follow up 07 cases
Final analysis done for-138 cases

RESULTS

In present study, total of 138 pregnant mothers were included after taking informed consent. The mean age of participants was found to be 26.20±4.24yrs. Among them majority were in the age group of 19-25yrs (47.1%), followed with 26-30yrs of age (40.6%) and 12.3% were in age of 31-40yrs.

Table 1: Showing the mean age of pregnant mothers in present study

	N	Minimum	Maximum	Mean	SD
Age	138	19	39	26.20	4.24

Table 2: Showing the age-wise distribution of pregnant mothers

		Frequency	Percent
Age group	19-25yrs	65	47.1
	26-30yrs	56	40.6
	31-40yrs	17	12.3
	Total	138	100.0

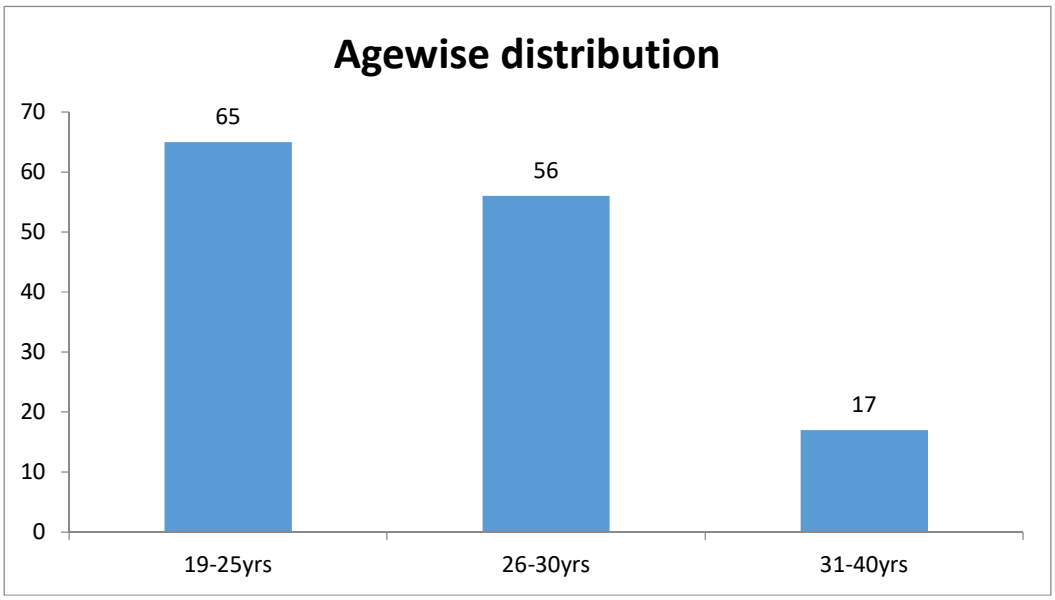


Figure 1: Showing the age-wise distribution of pregnant mothers

Table 3: Showing the status of pregnancy registration among study participants

		Frequency	Percent
Registration details	Registered	90	65.2
	Unregistered	48	34.8
	Total	138	100.0

Majority of the pregnancy were registered (65.2%) and unregistered were 34.8%.

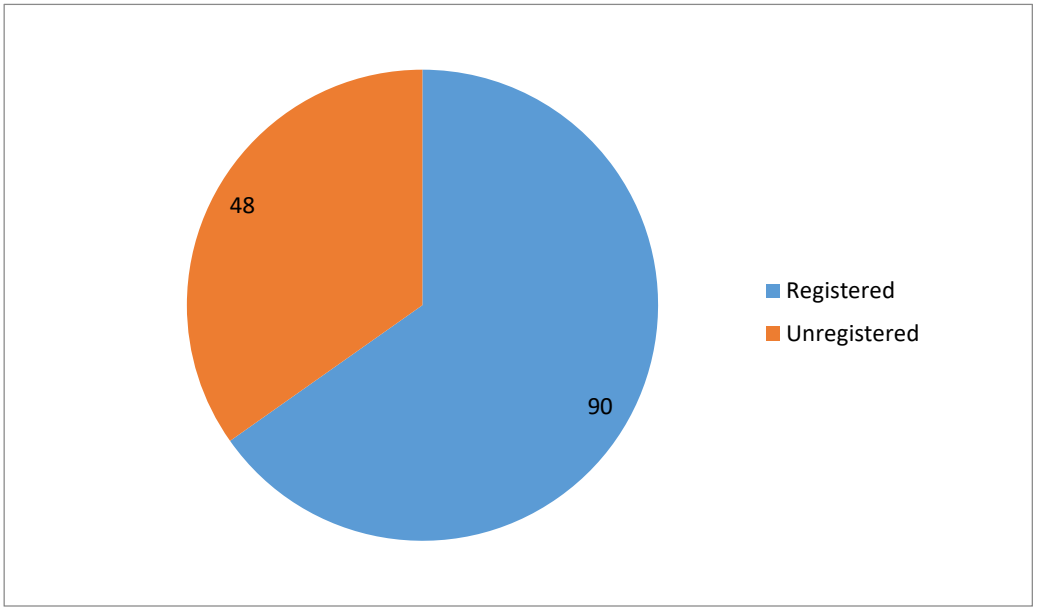


Figure 2: Showing the status of pregnancy registration among study participants

Table 4: Showing the status of obstetric score among pregnant mothers

		Frequency	Percent
Obstetric history	MULTI	84	60.8
	PRIMI	54	39.1
	Total	138	100.0

Among them 39.1% were primigravida and 60.8% were multigravida.

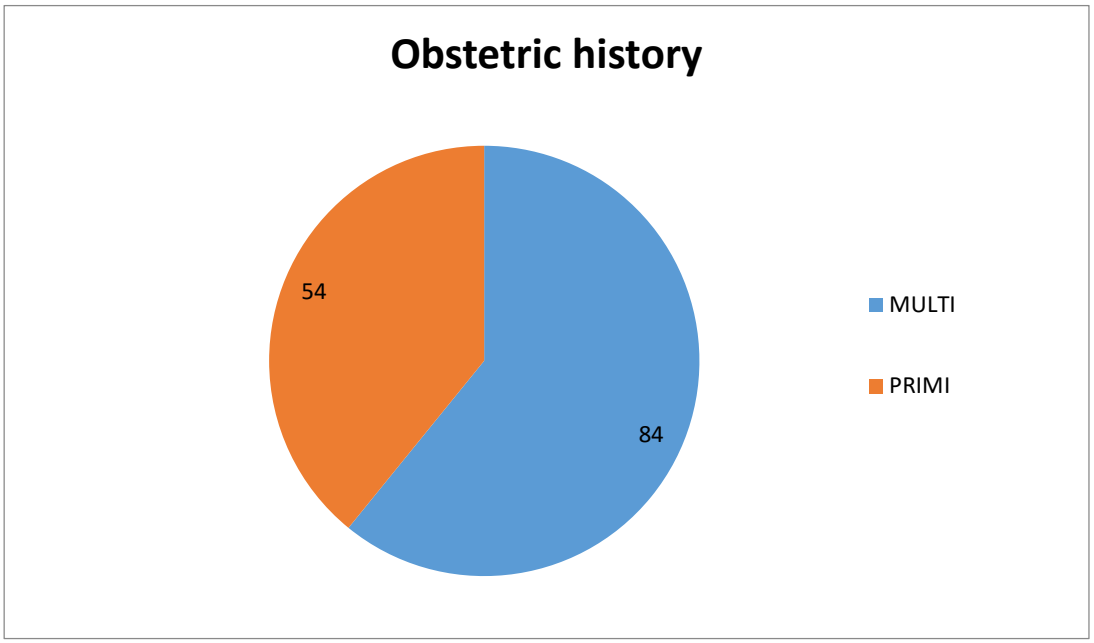


Figure 3: Showing the status of obstetric score among pregnant mothers

Table 5: Showing the mode of delivery among the included study participants

Mode of delivery	No. of cases	Percentage
LSCS	90	65.2
FTD	43	31.2
Ventouse	02	1.4
Forceps	03	2.2
Total	138	100.0

The mode of delivery, 65.2% underwent the LSCS, 31.2% with full term normal vaginal delivery, 2.2% with forceps and 1.4% with Ventouse method.

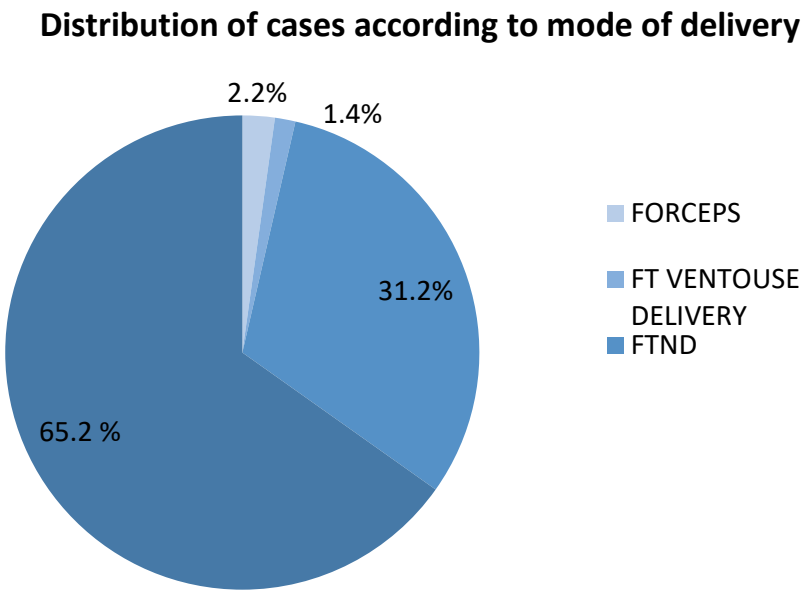


Figure 4: Showing the mode of delivery among the included study participants

Table 6: Showing the frequency of type of hypothyroidism among the study participants

		Frequency	Percent
Maternal TSH group	Subclinical hypothyroidism (4- 10 mciu/ml)	133	96.4
	Overt Hypothyroidism (> 10 mciu/ml)	5	3.6
	Total	138	100.0

On thyroid assessment among the pregnant women, majority were with subclinical hypothyroidism among the included mothers (96.4%) and 3.6% were with clinical overt hypothyroidism.

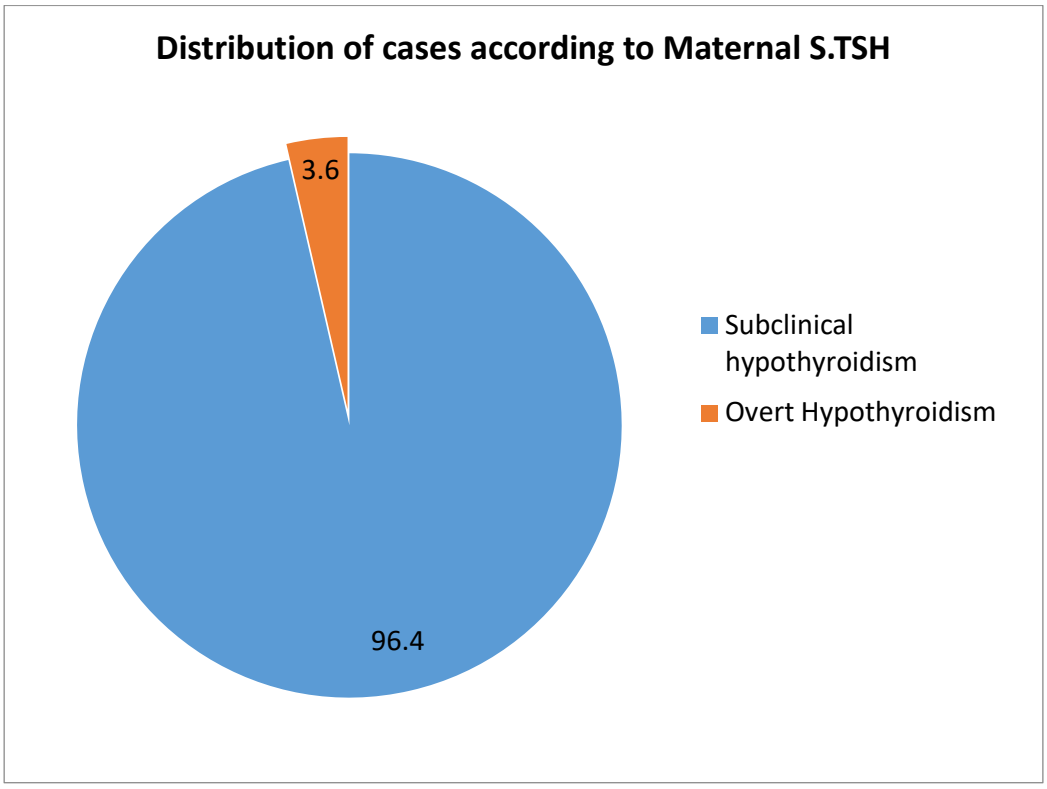


Figure 5: Showing the frequency of type of hypothyroidism among the study participants

Table 7: Showing the gestational age at diagnosis of hypothyroidism

Gestational age at diagnosis	No. of cases	Percentage
28 weeks -32 weeks +6 days	41	29.7
33weeks -36 weeks +6 days	70	50.7
37 weeks -40 weeks+ 6 days	24	17.4
>41weeks -42 weeks +6 days	3	2.2
Total	138	100.0
Majority of pregnant mothers were diagnosed at the gestational age of 33-36wks+6days in 50.7% and 29.7% were diagnosed in gestational age of 28-32wks+6days.		

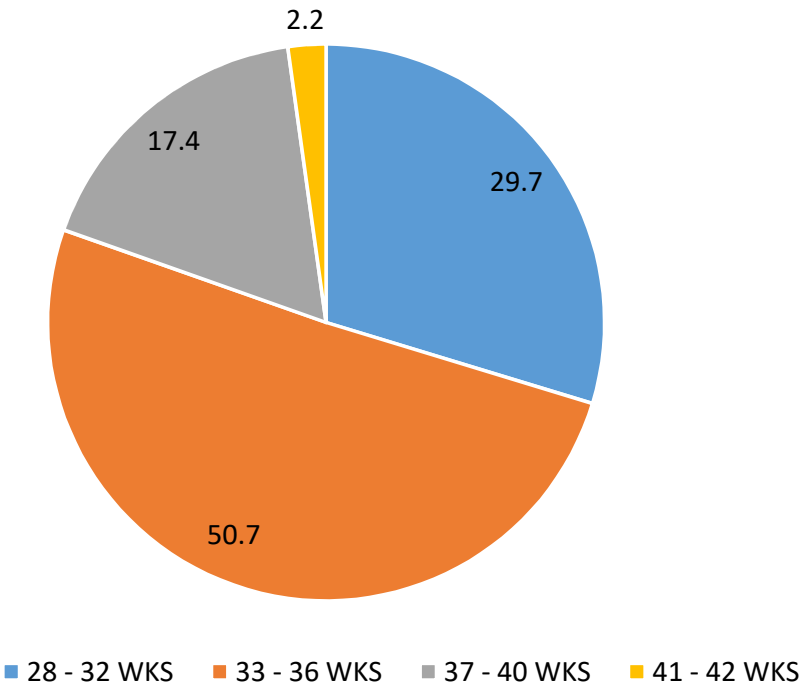


Figure 6: Showing the gestational age at diagnosis of hypothyroidism

Table 8: Showing the treatment by supplementation of levothyroxine received by the participants

Tab. Levothyroxine (mcg)		No. of cases	Percentage
Treatment by supplementation	Nil	5	3.6
	12.5	8	5.8
	25	50	36.2
	50	48	34.8
	75	16	11.6
	100	7	5.1
	125	2	1.4
	150	2	1.4
	Total	138	100.0

All the pregnant mothers were put on the treatment with levothyroxine for the hypothyroidism. 36.2% were treated with 25mcg and 34.8% were with 50mcg. 5 mothers were not started on treatment at the time of recruitment.

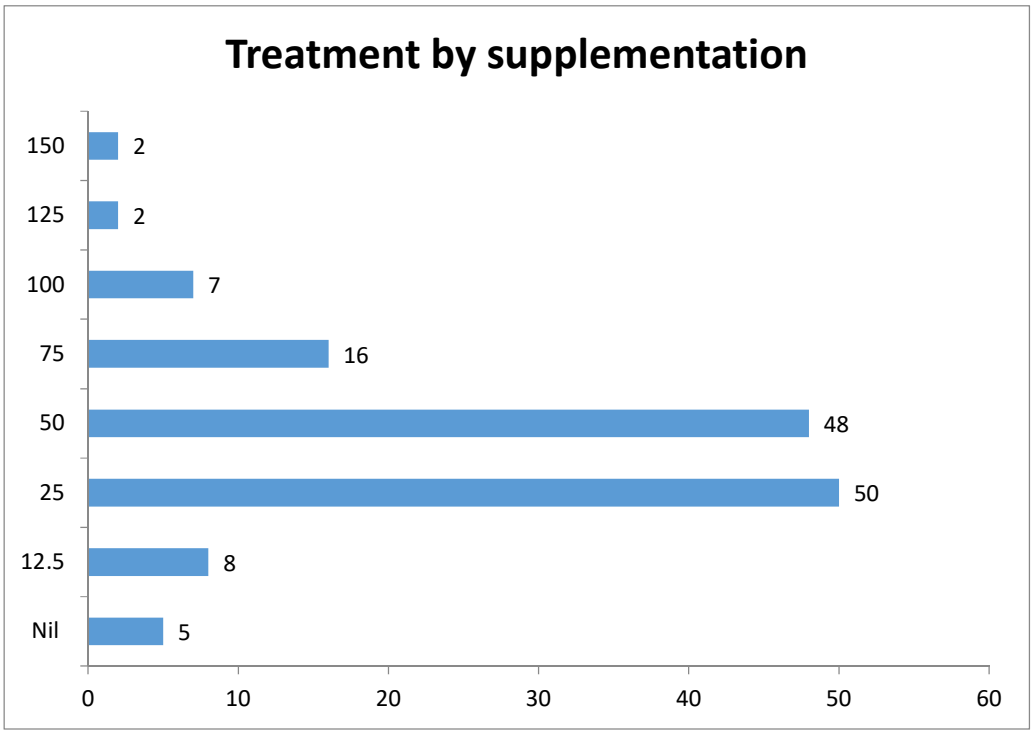


Figure 7: Showing the treatment by supplementation of levothyroxine received by the participant

Table 9: Showing the period of gestational age at delivery

Period of gestational age	No. of cases	Percentage
37 weeks	35	25.4
38 weeks	43	31.1
39 weeks	38	27.5
40weeks	16	11.6
41weeks	6	4.4
Total	138	100

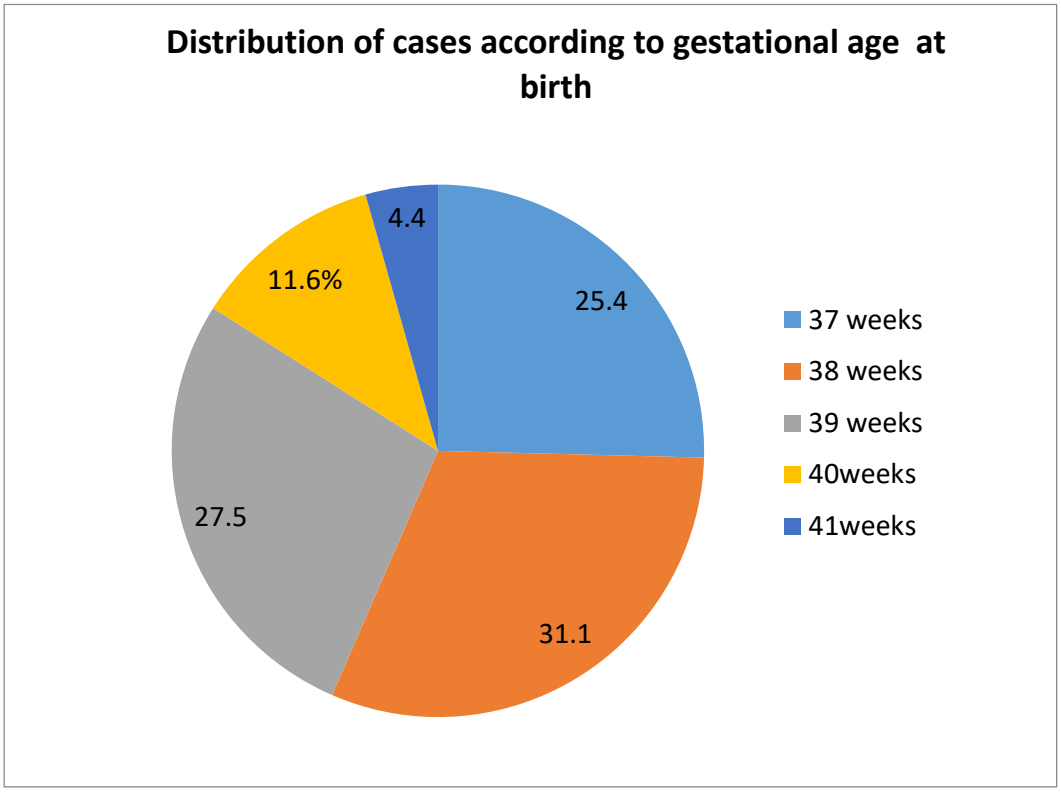


Figure 8: Showing the period of gestational age at delivery

Table 10: Showing the birth weight of newborn among the study participants

Birth weight group	No. of cases	Percentage
2.5-3.0kg	98	71.0
3.1-3.5kg	37	26.8
>3.5kg	3	2.2
Total	138	100

On assessment of birth weight of newborn, majority of newborn in the age of 2.5-3.0kg (71.0%) and 26.8% with weight of 3.1-3.5kg. 3 newborn were of weight more than 3.5kg. On assessment of the maternal thyroid status and the neonatal thyroid levels.

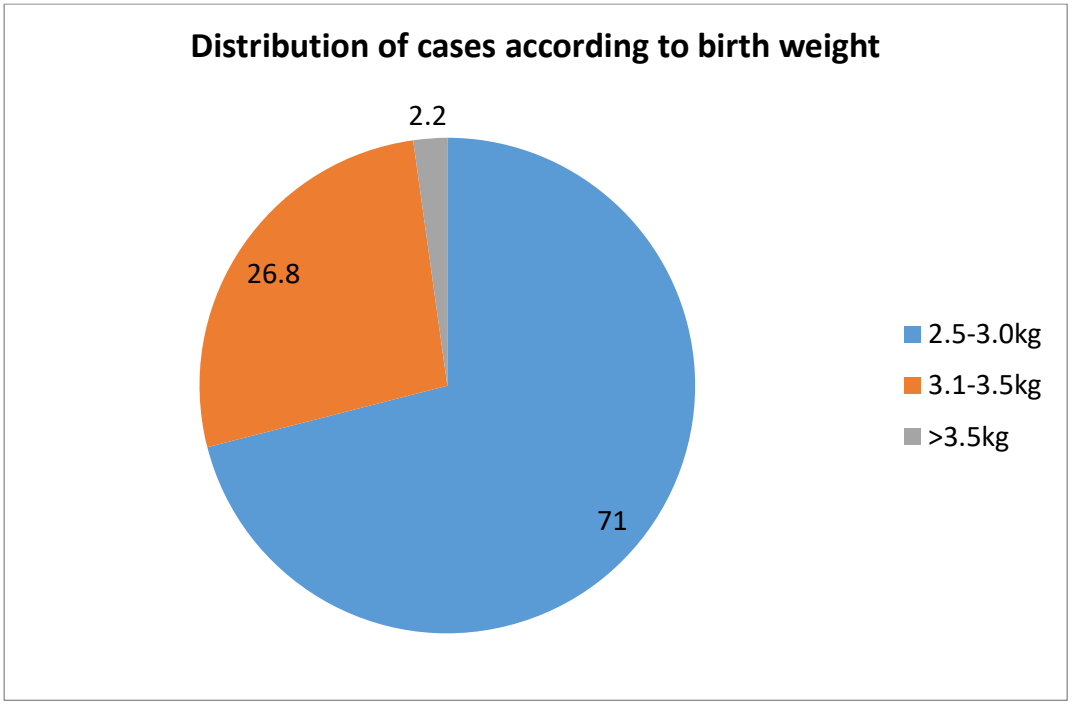


Figure 9: Showing the birth weight of newborn among the study participants

Table 11: Showing the mean level of APGAR score among the newborn

APGAR	No. of cases	Minimum	Maximum	Mean	Std. Deviation
1 MIN	138	5.00	8.00	6.13	0.71
5 MIN	138	7	10	8.45	0.663

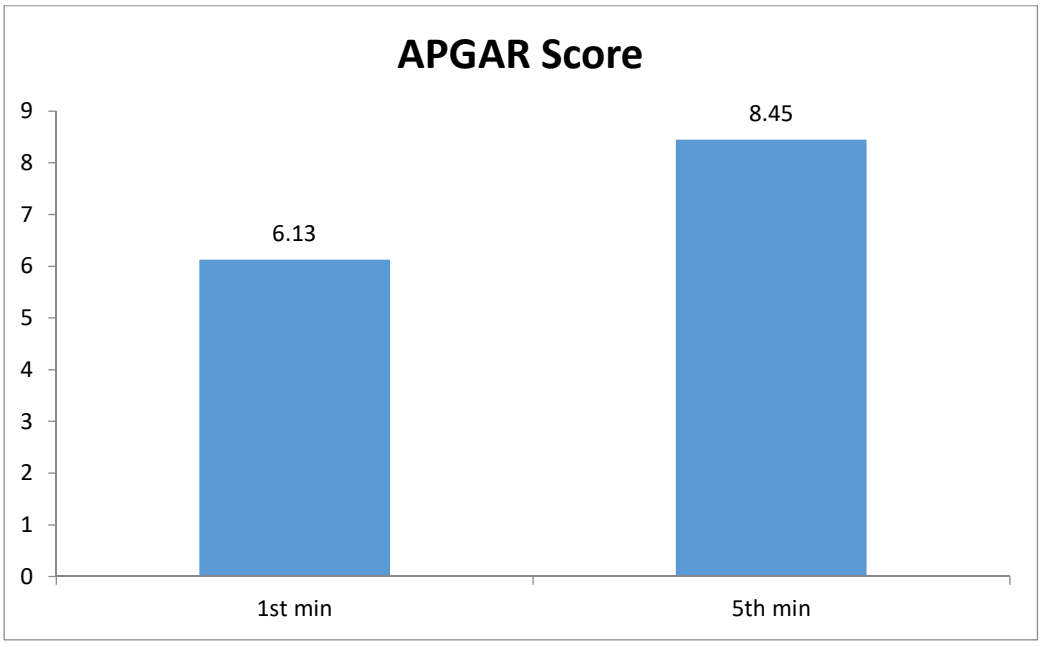


Figure 10: Showing the mean level of APGAR score among the newborn

Table 12: Correlation of maternal and neonatal thyroid levels at day 3 of life

Maternal S.TSH (MCIU/ml)		Neonatal S.TSH on day 3 of life			Neonatal Total T4 on day 3 of life			P value
	n=133	Ref range	No. of cases	Percentage	Ref range	No. of cases	Percentage	
4 – 10 (subclinical hypothyroidism) Treated group	106	< 1.9	0	0	< 7.3	03	2.8	0.0026
		1.9 -11.5	102	96.2	7.3 - 11.1	100	94.4	
		> 11.5	04	3.8	> 11 .1	03	2.8	
4 – 10 (subclinical hypothyroidism) Untreated group	27	< 1.9	0	0	< 7.3	04	14.8	
		1.9 -11.5	20	81.5	7.3 - 11.1	23	85.2	
		> 11.5	07	18.5	> 11 .1	0	0	

The higher TSH was seen among the newborn born to mothers who are untreated for the thyroid disorder (18.5%) compared to the infants born to mothers treated for thyroid disorder (3.8%).($p<0.05$) However the mean level of the TSH and T4 among the newborn on 3rd day compared with maternal level didnot show any significant correlation.($p>0.05$)

Table 13: Correlation of maternal and neonatal thyroid levels at day 3 of life (on treatment)

Maternal S.TSH (MCIU/ml)		Neonatal S.TSH on day 3 of life			Neonatal Total T4 on day 3 of life		
	n	Ref range	No. of cases	Percentage	Ref range	No. of cases	Percentage
> 10 (overt hypothyroidism)	05	< 1.9	0	0	< 7.3	0	0
		1.9 -11.5	5	100	7.3 - 11.1	5	100
		> 11.5	0	0	> 11.1	0	0

Table 14: Co-relation of maternal and neonatal thyroid levels at day 3 of life

	N	Minimum	Maximum	Mean	Std. Deviation	R(Pearson correlation coefficient)	P value
Maternal TSH	138	4.00	20.26	5.8616	2.21	0.1163	0.174336
Neonatal TSH at day 3	138	1.95	18.02	3.5849	3.27		
Neonatal T4 at day 3	138	1.10	23.80	8.8609	5.83		

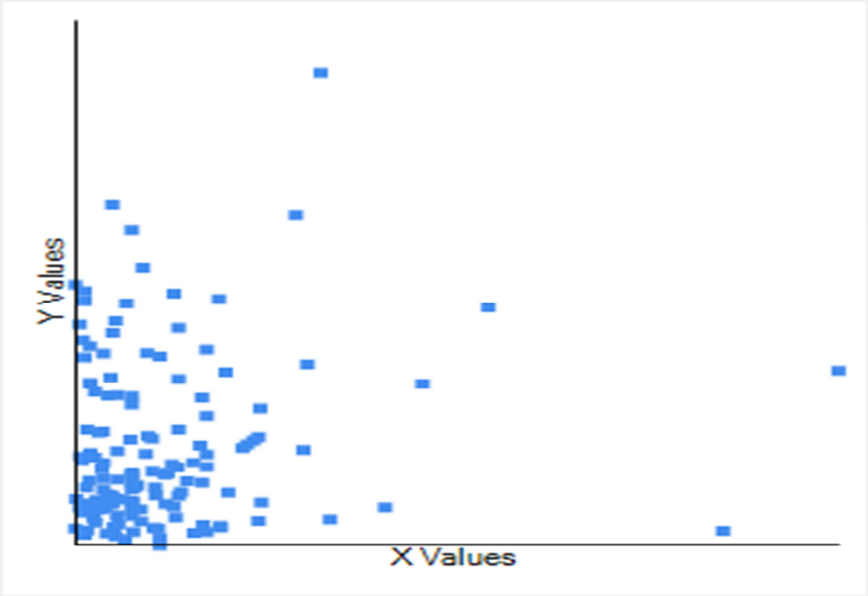


Figure 11: Correlation of maternal and neonatal thyroid levels at day 3 of life

X = Maternal thyroid values

Y = Neonatal thyroid values

Table 15: Developmental milestones attained at the age of (Maternal subclinical hypothyroidism - Treated group)

Developmental milestones	1st month	2nd month	3rd month	4th month	n =106	Percentage
Social smile (0-2 months)	45	61	-	-	106	100
Eyes follow pencil/pen (2- 3months)	-	69	37	-	106	100
Holds head steadily (2- 3 months 15 days)	-	102	04	-	106	100
Rolls from back to stomach (2 months 15 days – 5 months)	-	98	8	-	106	100
Cooing (2months)	-	106	-	-	106	100
Spontaneous laugh (2 months - 4 months)	-	38	68	-	106	100
Reaches out for familiar person (3- 4 months)	-	4	60	42	106	100
Turns head to sound of bell rattle (3- 4months)	-	-	71	32	103	97.2

On assessment of the milestone achieved among the infants born to treated group of mothers for thyroid disorder, all the newborn achieved the milestones appropriate to the months assessed from 1st month to 4th month of birth. However in

the mothers untreated for the thyroid disorders, there was reduced activity of reach out for familiar person at 3-4th month of life (14.8%).

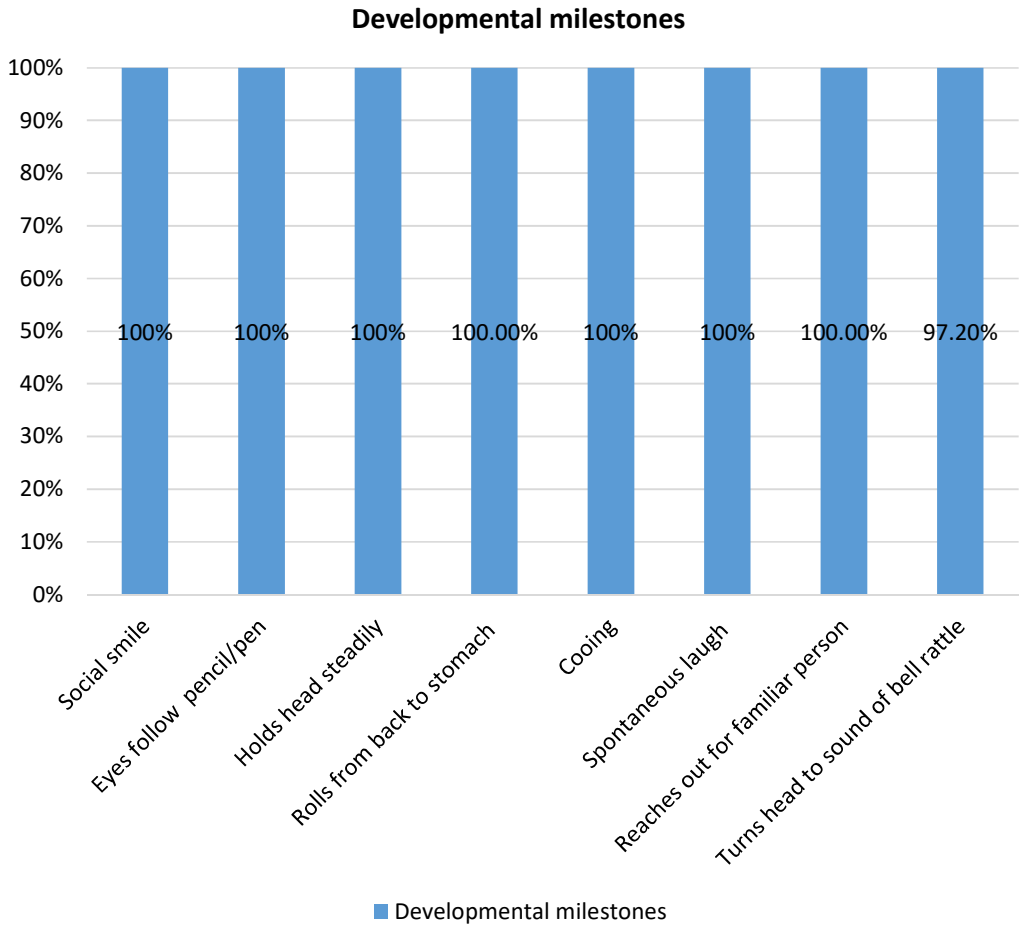


Figure 12: Developmental milestones attained at the age of (Maternal subclinical hypothyroidism - Treated group)

Table 16: Developmental milestones attained at age of (Inadequately treated group –Maternal subclinical hypothyroidism group)

Developmental milestones	1st month	2nd month	3rd month	4th month	n = 27	Percentage
Social smile (0-2 months)	10	17	-	-	27	100
Eyes follow pencil/pen (2- 3months)	-	15	12	-	27	100
Holds head steadily (2- 3 months 15 days)	-	22	05	-	27	100
Rolls from back to stomach (2 months 15 days – 5 months)	-	18	07	01	27	100
Cooing (2months)	-	27	-	-	27	100
Spontaneous laugh (2 months - 4 months)	-	17	10	-	27	100
Reaches out for familiar person (3- 4 months)	-	-	10	13	23	85.2
Turns head to sound of bell rattle (3- 4months)	-	-	20	07	27	100

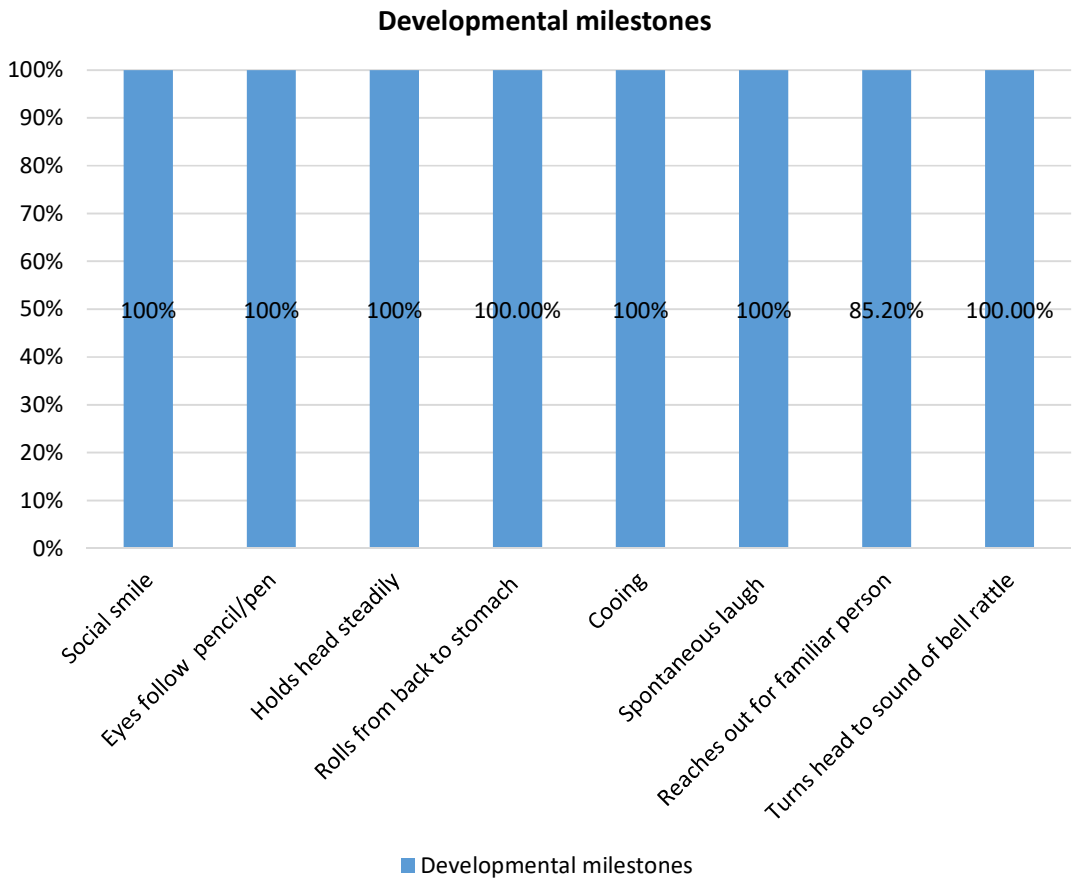


Figure 13: Developmental milestones attained at age of (untreated group – Maternal subclinical hypothyroidism group)

Table 17: Developmental milestones attained at age of (Maternal overt hypothyroidism group – treated group)

Developmental milestones	1st month	2nd month	3rd month	4th month	n = 05	Percentage
Social smile (0-2 months)	-	05	-	-	05	100
Eyes follow pencil/pen (2- 3months)	-	02	03	-	05	100
Holds head steadily (2- 3 months 15 days)	-	05	-	-	05	100
Rolls from back to stomach (2 months 15 days – 5 months)	-	-	03	02	05	100
Cooing (2months)	-	05	-	-	05	100
Spontaneous laugh (2 months - 4 months)	-	05	-	-	05	100
Reaches out for familiar person (3- 4 months)	-	-	-	04	04	80
Turns head to sound of bell rattle (3-4months)	-	-	-	05	05	100

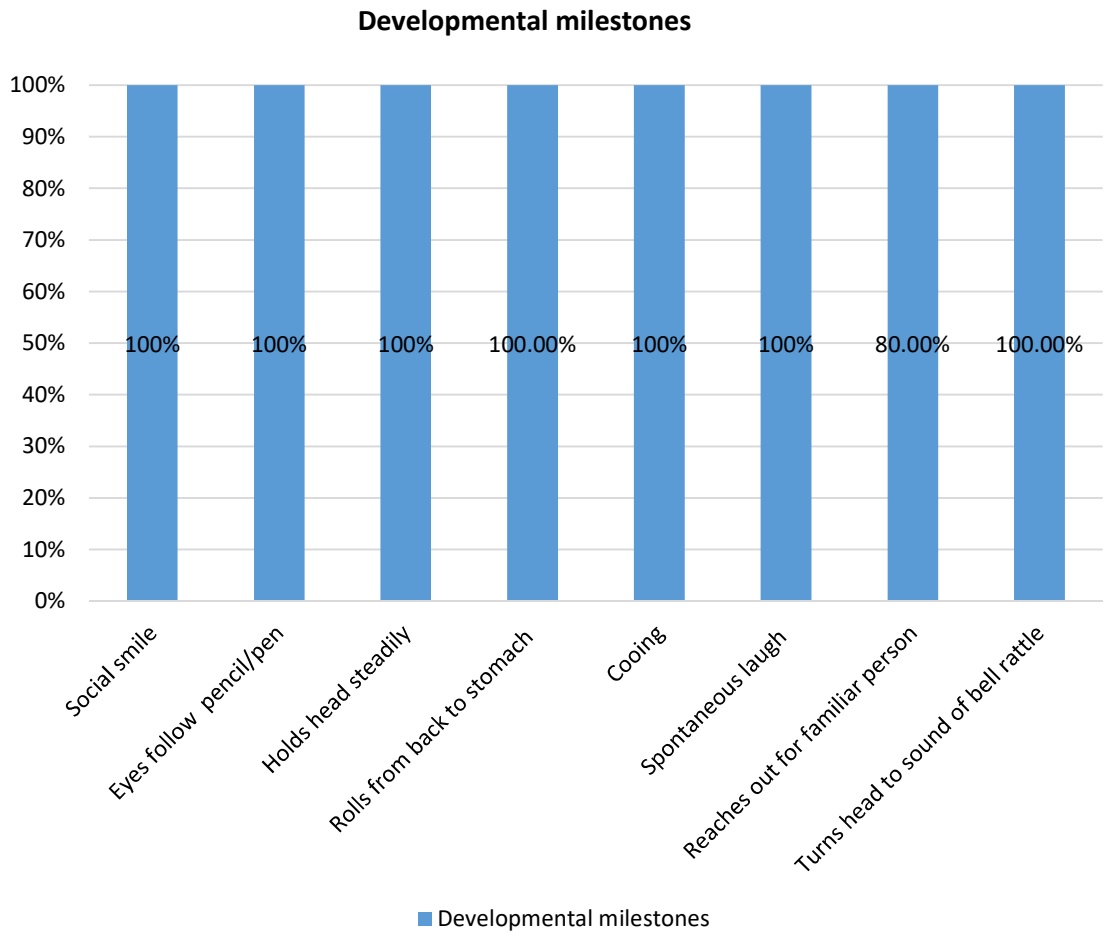


Figure 14: Developmental milestones attained at age of (Maternal overt hypothyroidism group – treated group)

DISCUSSION

Thyroid disorder is common in women of reproductive age, and it is the most common endocrine disorders after diabetes in this age. Prevalence of thyroid disorders in pregnancy and its maternal and fetal complications in pregnant women vary greatly in different regions depending upon many factors. To date, there are few studies of thyroid function and pregnancy in Central India. The geographic location may be a factor in prevalence of thyroid disorder, because the amount of iodine in common salt and consumption of salt may vary from region to region. This study addresses issues related to co-relation of abnormal maternal thyroid function test and neonatal thyroid levels at day 3 of life and to screen developmental milestones in an infant up to 4 months of age in this setting.

In the present study, total 920 pregnant women screened for hypothyroidism, in that 196 pregnant women newly diagnosed with hypothyroidism after 28 weeks of gestation. Out of which 26 pregnant women were not eligible for the reason that 4 cases were known case of cardiac disease, 4 cases were known cases of chronic hypertension, 2 cases had overt diabetes mellitus, 6 cases had gestational diabetes mellitus at the time of recruitment , one case was a known case of epilepsy, 4 cases had a history of bad obstetric history, 5 cases developed severe pre-eclampsia at the time of recruitment.

Out of 196 cases, 170 pregnant women were with hypothyroidism diagnosed after 28 weeks were recruited in the study, in there 25 women were excluded from the study due to they developed complications later on that was three cases developed gestational diabetes mellitus, 2 cases developed gestational hypertension, 3 cases developed gestation hypertension plus gestational diabetes mellitus, 5 cases had

preterm delivery, 3 cases had term intra uterine death, 1 case had antepartum eclampsia, 4 cases had intra uterine growth restriction, 4 cases developed severe pre-eclampsia

Out of 170 cases, data collected and analysed for for 145 cases in which 7 cases were lost to follow up and final analysis done for 138 cases.

As per the recent guidelines of the American Pregnancy and Thyroid Association cut off values of thyroid levels in pregnancy are : 1st trimester: 0.1–4.0mIU/L, 2nd trimester: 0.2–4.5mIU/L, 3rd trimester: 0.3 -4mIU/L . In the present study cut off value for subclinical hypothyroidism taken with lower limit of 4 mIU/L and with upper limit of 10mIU/L and overt hypothyroidism is defined as serum TSH > 10 mIU/L.

The observed prevalence of thyroid disorder in 3rd trimester of pregnancy in the present study is 3.92 percent, which is comparable to the prevalence observed in a study conducted by Weiwei Wang et al. (10.2%) [66] and Ajmani et al. (13.25%) [67] Variations in different areas may be due to non uniformity in the study setting or in laboratory techniques, personal human error, and differences in sample size. In India, the prevalence of hypothyroidism in pregnancy is much higher compared to that in Western countries. Iodine deficiency could be a contributing cause. The percentage of households consuming iodised salt in India, as per the Iodine Network Global score card 2010, is 51% .[68] Hashimoto's thyroiditis is a cause of hypothyroidism in iodine sufficient areas, such as North America and Western Europe.

In present study, total of 138 pregnant mothers were included after taking informed consent. The mean age of participants was found to be 26.20±4.24yrs. Among them majority were in the age group of 19-25yrs (47.1%), followed with 26-30yrs of age (40.6%) and 12.3% were in age of 31-40yrs. In similar to present study,

Sravani et al., found the majority of pregnant women in age group of 21-25yrs of age.[62]

Majority of the pregnancy were registered (65.2%) and unregistered were 34.8%. among them 39.1% were primigravida and 60.8% were multigravida. In study by Sravani et al., majority of the pregnant women were multigravida (36%) and primigravida in 42%.[62]

The mode of delivery, 65.2% underwent the LSCS, 31.2% with full term normal vaginal delivery, 2.2% with forceps and 1.4% with Ventouse method. In Sravani et al., study 54% had mode of delivery as LSCS and 34% with emergency in them.[62] **Tudosa R, vartej** P, Horhoianu I, Ghica C, Mateescu S, Dumitrache I et al has reported that spontaneous delivery was 53.33% which is little lower in our study , mode of delivery in 65.2 % was caesarean section which is higher than study of tudosa R, Vartej P et al.

On thyroid assessment among the pregnant women, majority were with subclinical hypothyroidism among the included mothers (96.4%) and 3.6% were with overt hypothyroidism. We report mean serum TSH levels in women with subclinical hypothyroidism, overt hypothyroidism were being 7.18 and 16.03 respectively. Kalpana Mahadik et.al found the prevalence of subclinical hypothyroidism, overt hypothyroidism, and subclinical hyperthyroidism in pregnancy is 5.6, 3.5, and 1.5%, respectively this is in agreement with the findings of some Indian studies in which the prevalence of subclinical hypothyroidism and overt hypothyroidism is 6.1 and 0.7% respectively[69]. Another Indian study in 2016 reports prevalence of Subclinical hypothyroidisn 8% in 3rd trimester[70]. In a recent review and meta-analysis, prevalence rates reported were 0.50, 3.47, and 2.05% for overt hypothyroidism, subclinical hypothyroidism and isolated hypothyroxinaemia respectively.[71] Kalpana

Mahadik et.al found that mean serum TSH levels in women with subclinical hypothyroidism, overt hypothyroidism, and subclinical hyperthyroidism being 8.02 ± 1.25mIU/ml, 11.92 ± 5.34mIU/ml, and 0.07 ± 0.03mIU/ml respectively.

Majority of pregnant mothers were diagnosed with hypothyroidism at the gestational age of 33-36wks+6days in 50.7% and 29.7% were diagnosed in gestational age of 28-32wks+6days. And majority of women delivered at gestational age of 38 weeks in 31.1 % and 39 weeks in 27.5%.

Out of 138 women, 106 (76.8%) pregnant women who were diagnosed with hypothyroidism after 28 weeks were adequately treated with L- levothyroxine and 27 (19.5%) women were inadequately treated (who were not on treatment atleast 15 days prior to pregnancy) and 5 (3.6%) women were not on treatment at the time of recruitment. Sravani G et al. I 60 % had treated and 40% had not treated at the time of admission.

On assessment of birth weight of newborn, majority of newborn in the age of 2.5-3.0kg (71.0%) and 26.8% with weight of 3.1- 3.5kg. 3 newborn were of weight more than 3.5kg. kapil R.et al study had 4% of newborn were of 2.0 to 2. 4kg at birth, 60 % of newborn babies were 2.5 to 3.0kg and 36 % were of birth weight of 3 to 3.5 % and in this study they did not found birthweight more than 3.5kg

On assessment of the maternal thyroid status and the neonatal thyroid levels, we them into divided in 3 groups in which 1st group - 106 (79.6%) mothers were found to have subclinical hypothyroidism and treated adequately, in this group 04 (3.8 %) neonates had abnormal thyroid values and in the 2nd group - 27(20.3%) mothers with subclinical hypothyroidism who were inadequately treated 07(18.5%) neonates

had abnormal thyroid values. In the third group 05 (3.75%) were found to have overt hypothyroidism and all 5 were treated in this group all neonates found to have normal thyroid values. The higher TSH was seen among the newborn born to mothers who are inadequately treated for the thyroid disorder (18.5%) compared to the infants born to mothers treated for thyroid disorder (3.8%) which was statistically significant (p value – 0.0026)

However the mean level of the TSH and T4 among the newborn on 3rd day compared with maternal thyroid level did not show any significant correlation according to R(Pearson co-relation coefficient) with value of 0.1163 Shravani MR et.al, found that all the babies had a normal TSH and T4 levels which was probably because of early diagnosis and timely initiation of treatment to the mothers with hypothyroidism.[51]

This prospective observational study is, to our knowledge, the first to have examined the neurodevelopmental outcomes of children born to mothers with hypothyroidism.

Trivandrum developmental screening chart (TDSC) used to screen developmental milestones of infant at 4th months of life. In our study aim was to call mothers and babies for follow up at 4 months and assess developmental milestones using TDSC due to covid pandemic this has changed to telephonic assessment. On telephonic assessment the milestones achieved among the infants born to treated group of mothers for thyroid disorder, all the newborn achieved the milestones appropriate to the months assessed from 1st month to 4th month of birth. However in the mothers inadequately treated for the thyroid disorders, there was reduced activity of reach out for familiar person at 3-4th month of life (14.8%). However we cannot

comment on reaching out to familiar person delay because it depends on home environment, stimulation from parents and opportunities given for interaction by the child. Hence it may be incidental finding covid pandemic also affected opportunities for interaction. Wolfber A et.al, concluded that the hypothyroidism in mothers during the pregnancy influences the fetus growth and fetal thyroid hormone production. This has got significant influence on the maternal outcome, newborn outcome and the milestones achievement.[43]

The developing brain goes through a phase with very high growth velocity with glia cell multiplication, migration and myelinization from the third trimester of pregnancy up to 2–3 years postnatally. These developmental processes are highly thyroid- dependent , It is important to obtain more knowledge about the brain's vulnerability to variations in circulating thyroid hormones during different age periods, and also the functions that are influenced at different ages. Although the consequences of maternal hypothyroidism on foetal brain development are not clearly established, numerous recent studies suggest that IQ is impaired. These findings have raised concerns that even moderate hypothyroidism might impair proper brain development. Indeed, some writers have recommended thyroid dysfunction monitoring programmes during or even before pregnancy. The economic effect is significant, thus it is critical to identify not just the underlying potential problems but also the intervention aims.[63–65]

Tudosa R et al., concluded that an increased prevalence of maternal and fetal complications during labor and childbirth in hypothyroid women. appropriate, early administered treatment and maintenance of the normal level of thyroid hormone minimize the risk of maternal and fetal complications. [45] Singh A et al., stated that routine screening for thyroid hormone status and early confirmation of diagnosis and

prompt treatment will benefits for better maternal and fetal outcome. It is difficult to diagnose hypothyroidism clinically in pregnancy due to non-specific presenting features which may be masked by existing obstetric symptoms.[52] Early treatment and maintenance of euthyroid condition, according to R.Tudosa et al., reduces the incidence of maternal and fetal problems. The exact process causing premature labour, placental abruption, and other pregnancy-related issues is unknown, but one theory is defective early placentation.[70]

CONCLUSION

In this study we found that there is no significant co-relation between maternal and neonatal thyroid levels.

This prospective study suggest that subclinical hypothyroidism mothers who were adequately treated compared with inadequately treated mothers, may have mild adverse effects on some of the developmental milestones of the child. However long term follow up of these infants is required.

The clinical implications are limited, but the observed difference suggest that the control of thyroid function during pregnancy may be an important determinant of early neurodevelopment.

SUMMARY

The current study was a prospective observational study that was conducted for a period of 1 year 3 months from January 2020 to march 2021 at "KLE's Dr Prabhakar Kore Charitable Hospital and Medical Research centre", attached to KAHER's JNMC, Belagavi.

The primary objective of this study was co-relation of maternal and infant thyroid levels at day 3 of life and Secondary objective was To assess developmental milestones in infants born to mothers with hypothyroidism up to age.

In the present study, total 920 pregnant women screened for hypothyroidism, in that 196 pregnant women newly diagnosed with hypothyroidism after 28 weeks of gestation attending antenatal out-patient department, admitted in labor room and diagnosed as hypothyroidism in third trimester and fulfilling inclusion criteria were enrolled in the study after institutional ethics approval and consent from study subjects.

Pregnant women who were diagnosed with hypothyroidism after 28 weeks of gestation and their newborn included in the study and thyroid levels of these newborn done at 3rd day of life and their developmental milestones were assessed at 4 months of life telephonically and results were tabulated and compared.

The mean age of the pregnant women in our study was 26.20 ± 4.24 years. Among the 138 participants, 39.1% were primigravida and 60.8% were multigravida, and registered (65.2%) and unregistered were 34.8%. Majority of the women 96.4% diagnosed with subclinical hypothyroidism and 3.6 % with overt hypothyroidism at gestational age of 33 – 36 weeks accounting to 50.7% and 28- 32 weeks accounting to 29.7%, all pregnant women were started on treatment except 5 were not started on

treatment at the time of recruitment. Most of the women ie; 31.1 % delivered at 38 weeks of gestation and 27.5 % at 39 weeks of gestation. And 71 % of newborn birth weight was 2.5 -3.0kg.

The higher TSH was seen among the newborn born to mothers who are inadequately treated for the thyroid disorder (18.5%) compared to the infants born to mothers treated for thyroid disorder (3.8%). With a P value -0.0026 which was statistically significant. However the mean level of the TSH and T4 among the newborn on 3rd day compared with maternal level did not show any significant correlation with p value of 0.174336 and Pearson's correlation coefficient" value of r=0.1163. Shravani MR et.al, found that all the babies had a normal TSH and T4 levels which was probably because of early diagnosis and timely initiation of treatment to the mothers with hypothyroidism.

Trivandrum developmental screening chart (TDSC) used to screen developmental milestones of infant at 4th months of life. On telephonic assessment the milestones achieved among the infants born to treated group of mothers for thyroid disorder, all the newborn achieved the milestones appropriate to the months assessed from 1st month to 4th month of birth. However in the mothers inadequately treated for the thyroid disorders, there was reduced activity of reach out for familiar person at 3-4th month of life (14.8%). However we cannot comment on reaching out to familiar person delay because it depends on home environment, stimulation from parents and opportunities given for interaction by the child. Hence it may be incidental finding covid pandemic also affected opportunities for interaction. Wolfber A et.al, concluded that the hypothyroidism in mothers during the pregnancy influences the fetus growth and fetal thyroid hormone production. This has got significant influence on the maternal outcome, newborn outcome and the milestones achievement.

In this study we found that there is no significant co-relation between maternal and neonatal thyroid levels.

This prospective study suggest that subclinical hypothyroidism mothers who were adequately treated compared with inadequately treated mothers, may have mild adverse effects on some of the developmental milestones of the child. However long term follow up of these infants is required.

The clinical implications are limited, but the observed difference suggest that the control of thyroid function during pregnancy may be an important determinant of early neurodevelopment.

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ANNEXURE - I - ETHICAL CLEARANCE

K.L.E. ACADEMY OF HIGHER EDUCATION AND RESEARCH
(Deemed – to- be- University)
Accredited 'A' Grade by NAAC (2nd Cycle) Placed in Category 'A' by MHRD (GoI)
JAWAHARLAL NEHRU MEDICAL COLLEGE,
NEHRU NAGAR, BELAGAVI-590010 (KARNATAKA-INDIA)
Website: http//www.jnmc.edu
E-Mail : dome@jnmc.edu
Phone: (+ 91-(0)831 Office : 2472550
Principal: 2471701
Fax No. +91 (0)831 – 2470759

Ref: MDC/DOME/ 167. **Date: 24/12/2019**

To,
REG. NO. BJ0119011
PG student in Obstetrics & Gynaecology,
J.N.Medical College,
BELAGAVI.

Sub: Institutional Ethical Clearance for the study.

With reference to the above, we wish to inform you that your proposed research project titled **"CO-RELATION OF MATERNAL HYPOTHYROIDISM AND INFANT OUTCOME: A PROSPECTIVE STUDY",** is ethical and justifiable. The proposed research project has been cleared by the JNMC Institutional Ethics Committee on Human Subjects Research.

(Dr. Anita Dalal)
Member Secretary
JNMC Institutional Ethics Committee
on Human Subjects Research,
J.N.Medical College, Belagavi.

(Dr. Roopa M Bellad)
Chairman,
JNMC Institutional Ethics Committee
on Human Subjects Research,
J.N.Medical College, Belagavi.

18

ANEXXURE II- CONSENT FORM

Purpose of the study

I have been informed by **REG. NO. BJ0119011,** Post Graduate in M.S. Obstetrics and Gynaecology under the guidance of Dr. _____and Associate Professor, Department of Obstetrics and Gynaecology, and Dr. _____ Department of Peadiatrics, J.N. Medical College, Belagavi is conducting a study on maternal hypothyroidism and infant outcome a prospective study KAHER's Dr.Prabhakar Kore Charitable Hospital, Belagavi.

To assess the relationship between hypothyroidism in women during pregnancy and the subsequent neuropsychological development of their offspring. There are paucities in availability of studies to assess the maternal hypothyroidism and its outcome in the infant thyroid out-come on the day 3 and follow-up at 4^{TH} month of life. In view of the same, current study is designed to assess the infant thyroid outcome in hypothyroid mothers

Study procedure:

Once I have signed the informed consent form, the personal details like name, age, place, address, my education, my health, reproductive history and other information will be noted down. Screening for thyroid S.TSH levels of mother after 28 weeks of gestation and neonatal thyroid level at 3 days and 6 weeks of life will be assessd The reports will be noted and I will be followed up.

Potential Risks

There are no observable risks associated with the study.

Benefits

There is a benefit as I will be followed up in my antenatal period on a regular basis and will be delivering in KAHER's Dr.Prabhakar Kore Charitable Hospital, Belagavi. And follow of neonates will be done at high risk clinic

Financial incentive for participation

I will not receive any payment for taking part in this research study.

Alternatives

If I decide not to participate in the study, my health care provider will provide the usual standard care during my pregnancy

Privacy

To protect my privacy, all the collected information will be given a number rather than using my name. Any information collected during the study will remain confidential. My medical files will be reviewed only at the hospital (or study doctor's office) to check the information and verify the result without breaking my confidentiality. Only de-identified information on my pregnancy will be shared so as to learn the results of the study.

Authorisation to publish results

The information about me will be analysed together with other study participants.

Results of this study will be published and presented to scientific groups for scientific purposes, but I will never be individually identified in the presentation of the study results.

Institutional Policy

In case I have any questions related to the study, in future or in case of study related injury or illness, I can contact **REG. NO. BJ0119011,** Department of Obstetrics and Gynaecology, J.N Medical College, Ph.No. _____ or phone number: _____ or Dr. _____, Dept. Of Obstetrics and Gynaecology, J.N Medical College, Belagavi Ph.: _____ or phone number: _____.

Voluntary Participation

My participation in the study is voluntary. In case I need any further information regarding my rights as study participant, I may contact Dr. Roopa M Bellad, Professor of Paediatrics, as Chairman of J. N. Medical College Institutional Ethics Committee on Human Subjects Research, Phone No.0831 2473777 ext-1527 at J. N. Medical College, Belagavi. My doctor will take care of me during this pregnancy or in the future. I am free to stop participation in this study at any time and for any reason.

Consent statement:

I, _____ voluntarily agree for participating in this study. By signing this consent form I am not giving up any of my legal rights, I may withdraw from the study anytime. I am signing the consent form after having read or been read form in my own vernacular language, including the risks and the benefits and having all my questions answered.

Participant Name : _____

Signature of the Left Thumb Print of Participant : _____

Investigators Name: _____ **Signature:** _____

Witness Name : _____ Signature: _____

Date: _____

ANNEXURE III – MATERNAL PROFORMA

SCREENING NUMBER: DATE OF SCREENING: OP/IP

NUMBER:

FIRST NAME: MIDDLE NAME: LAST

NAME:

AGE: SEX:

ADDRESS:

ADDRESS: PHONE NUMBER:

REGISTERED	
UNREGISTERED	

MODE OF DELIVERY:

C-SECTION	
NORMAL DELIVERY	
VENTOUSE	
INSTRUMENTAL	

OBSTETRIC HISTORY:

GRAVIDA	
PARA	
LIVING	
ABORTION	
DEATH	

MENSTURAL HISTORY:

LAST MENSTURAL PERIOD	
EXPECTED DATE OF DELIVERY	
PERIOD OF GESTATION	

PAST HISTORY

K/C/O HYPERTHYROIDISM/HYPOTHROIDISM	
DIABETES	
HYPERTENSION	
PREVIOUS BAD OBSTETRIC HISTORY	

GENERAL PHYSICAL EXAMINATION:

PULSE RATE	
BLOOD PRESSURE	
PALLOR	
PEDAL EDEMA	
THYROID SWELLLING	

ROUTINE INVESTIGATIONS

DATE:	
BLOOD GROUP	
HEMOGLOBIN	
PACKED CELL VOLUME	
LIVER FUNCTION TESTS	
RENAL FUNCTION TESTS	

SPECIAL INVESTIGATIONS

DATE	GESTATIONAL AGE	SERUM TSH

ON TREATMENT	

RESULT:

NEONATE PROFORMA

SCREENING NUMBER:

DATE OF SCREENING:

IP NUMBER:

NAME: AGE: SEX:

ADDRESS: PHONE NUMBER:

MODE OF DELIVERY:

BIRTH WEIGHT

APGAR SCORE:

1 MINUTE	5 MINUTES

THYROID PROFILE	72 HOURS	TREATMENT

DEVELOPMENTAL MILESTONES	4 MONTHS
1)SOCIAL SMILE	
2)EYES FOLLOW PEN/PENCIL	
3)HOLDS HEAD STEADILY	
4)ROLLS FROM BACK TO STOMACH	
5)COOING,SPONTANEOUS LAUGH,IMMITATES SOUNDS	
6)REACHES OUT FOR FAMILIAR PERSON	
7)TURNS HEAD TO SOUND OF BELL RATTLE	

IMPRESSION:

ANNEXURE IV - KEY TO MASTER CHART

UR/Reg	–	Unregistered/registered
Obs history	–	Obstetric history
LMP	–	Last menstrual period
EDD	–	Expected date of delivery
POG	-	Period of gestation
BOH	–	Bad obstetric history
S.TSH	–	Thyroid stimulating hormone

ANNEXURE IV - MASTERCHART

screening no	screening no	Ip Number	Age	Address	UR/REG	Mode of delivery	obs history	LMP	EDD	POG	H/O HTN	H/O DM	BOH	HYPO/HYPERTHYROIDISM	s.tsh	gest.age	treatment	birth weight	apgar @ 1 min	apgar @ 5 min	t4 @ day 3	s.tsh@ day 3	social smile	eyes follow pencil/pen	holds head steadily	rolls from back to stomach	cooing.spontaneous laugh,immitates sounds	reaches out for familiar person	turns head to sound of bell rattle	reaching for near object
1	01-08-2020	994563	30yrs	Address	REG	FTND	G2P1L1	04-03-2019	18/1/2020	40WKS	NO	NO	NO	NO	7.59	30 WEEKS	TAB.THYRONORM 100	3.0KG	7.00	9.00	12	7.59	PRESENT	PRESENT	PRESENT	PRESENT	COOING NOT YET	PRESENT	PRESENT	PRESENT
2	01-09-2020	994751	23yrs	Gokak	REG	FT VENTOUSE DELIVERY	PRIMI	03-02-2019	01-07-2020	39WKS 1 DAY	NO	NO	NO	NO	4.57	39WKS 1 DAY	NO	3.1KG	8.00	9.00	16.3	2.92	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT
3	21/1/2020	996917	19YRS	Belagavi	REG	FTND	PRIMI	24/4/2019	29/1/20	38WKS 6 D	NO	NO	NO	NO	5.22	28WKS 2 DAYS	T.THYRO 50MCG	2.6KG	8.00	9.00	13.1	1.65	PRESENT	pRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT
4	26/1/2020	997786	20YRS	Dharwad	UR	FTND	PRIMI	19/4/2019	24/1/20	40WK 1D	NO	NO	NO	NO	5.06	40WKS 1 DAY	T.THYRO 50MCG	2.5KG	7.00	8.00	10.4	0.26	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
5	13/2/2020	1001109	24yRS	soudatti	REG	ftemglscs	G2P1L1	18/5/2019	22/2/2020	38WK 4D	NO	NO	NO	NO	4.25	38WKS 5D	T.THYRO 25MCG	2.75KG	8.00	9.00	1.55	0.59	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
6	15/2/2020	1001663	24YRS	maharastra	REG	ftemglscs	PRIMI	05-08-2019	15/2/2020	40WK3 D	NO	NO	NO	NO	4.86	29WK4 D	T.THYRO 25MCG	3.1KG	7.00	8.00	8.2	0.36	PRESENT	PRESENT	PRESENT	PRESENT	WNL	NOT YET	PRESENT	PRESENT
7	19/2/2020	1002455	27YRS	Maharastra	REG	ftemglscs	PRIMI	13/5/2019	25/2/2020	39WK1 D	NO	NO	NO	NO	7.09	35WK6 D	T.THYRO 50MCG	3.1KG	7.00	8.00	9.5	0.76	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
8	21/2/2020	1002710	23YRS	Chandgad	REG	FTND	PRIMI	15/5/2019	03-05-2020	38WK1 D	NO	NO	NO	NO	4.6	29WK4 D	T.THYRO 25MCG	2.9KG	7.00	9.00	15.5	3.15	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
9	27/2/2020	1004098	29YRS	karnataka	REG	FTND	G3P2L2	06-07-2019	13/3/2020	37WK6 D	NO	NO	NO	NO	6.72	37WK6 D	T.THYRO 50MCG	2.5KG	8.00	9.00	1.56	0.8	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
10	27/2/2020	1004051	25YRS	maharastra	REG	FTND	G2P1L1	20/6/2019	26/3/2020	38WK3 D	NO	NO	NO	NO	4.8	28WK	T.THYRO 50MCG	2.7KG	8.00	9.00	8	1.89	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
11	28/2/2020	1004309	21YRS	Hukkeri	REG	ftemglscs	PRIMI	18/5/2019	03-02-2020	39WK4 D	NO	NO	NO	NO	4.39	30WKS	T.THRO 100MCG	3KG	7.00	8.00	1.73	1.06	PRESENT	PRESENT	PRESENT	PRESENT	WNL	NOT YET	PRESENT	PRESENT
12	03-02-2020	1004819	28YRS	Belagavi	REG	ftemglscs	primi	18/5/2019	22/2/2020	40WKS	NO	NO	NO	NO	4.6	32WK4 D	T.THYRO 25MCG	3.4KG	7.00	8.00	1.33	2.13	PRESENT	PRESENT	PRESENT	PRESENT	DOESN'T IMMITATE SOUND REST WNL	NOT YET	PRESENT	PRESENT
13	03-03-2020	1005313	33YRS	maharastra	REG	ftemglscs	G4P1L1A2	13/6/2019	28/3/2020	38WK4 D	NO	NO	NO	NO	5.2	34WKS	T.THYRO 25MCG	3.75KG	7.00	9.00	1.33	2.13	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
14	03-11-2020	1006285	28YRS	Belagavi	UR	Ftemglscs	G3P1L1A1	06-09-2019	22/3/2020	38WK3 D	NO	NO	NO	NO	5.55	36WK5 D	T.THYRO 25MCG	2.5KG	7.00	8.00	2.76	4.17	PRESENT	PRESENT	PRESENT	PRESENT	IMMITATES SOUNDS NOT YET	PRESENT	PRESENT	PRESENT
15	03-12-2020	1006461	20YRS	Belagavi	REG	FTND	G2P1L1	17/7/2019	22/4/2020	38WK4 D	NO	NO	NO	NO	4.82	32WKS	T.THYRO 25MCG	2.8KG	7.00	9.00	9.7	0.73	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
16	03-12-2020	1006638	28YRS	Chandgad	REG	ftemglscs	G2A1	18/6/2019	15/3/2020	39WK4 D	NO	NO	NO	NO	5.8	35WK1 D	T.THYRO 12.5MCG	2.7KG	8.00	9.00	2.01	0.3	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
17	13/3/2020	1006888	25YRS	Hukkeri	UR	ftemglscs	G4P2L2A1	06-07-2019	13/3/2020	40WK	NO	NO	NO	NO	5.44	40WKS	T.THYRO 50MCG	3.3KG	8.00	9.00	2.19	10.59	PRESENT	PRESENT	PRESENT	PRESENT	WNL	NOT YET	PRESENT	PRESENT
18	18/3/2020	1007789	27YRS	Belagavi	REG	FTND	G4P2L2A1	06-11-2019	17/3/2020	40WK1 D	NO	NO	NO	NO	6.8	36WK2 D	T.THYRO 50MCG	2.8KG	7.00	8.00	15.2	0.54	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT

19	21/3/2020	1008192	26YRS	Belagavi	REG	FTND	G3P2L2	17/6/2019	23/3/2020	39wk3d	NO	NO	NO	NO	4.09	31WK2D	T.THYRO 50MCG	2.7KG	7.00	8.00	2.2	8.43	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
20	28/3/2020	1088751	28YRS	Belagavi	REG	ftemglscs	G2P1L1	06-02-2020	03-11-2020	38WK	NO	NO	NO	NO	5.23	30WKS	T.THYRO 25MCG	2.8KG	6.00	7.00	3.7	0.53	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	NOT YET	NOT YET
21	31/3/2020	1008872	21YRS	Belagavi	REG	ftemglscs	PRIMI	20/6/2019	24/3/2020	38WK4D	NO	NO	NO	NO	5.32	38WK4D	T.THYRO 50MCG	2.5KG	8.00	9.00	10.2	2.29	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
22	04-02-2020	1008948	26YRS	Belagavi	REG	ftemglscs	G3P2L2	06-05-2019	16/4/2020	39WK3D	NO	NO	NO	NO	6.66	37WK	T.THYRO 25MCG	2.5KG	7.00	8.00	11.3	3.82	PRESENT	PRESENT	PRESENT	PRESENT	COOING NOT YET	PRESENT	PRESENT	PRESENT
23	04-03-2020	1009014	31YRS	Bailhongal	REG	ftemglscs	G2A1	07-10-2019	15/4/2020	38WK 2D	NO	NO	NO	NO	4.6	32WK	T.THYRO 25MCG	2.65KG	7.00	8.00	5.9	2.55	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
24	04-04-2020	1009102	26YRS	Belagavi	REG	ftemglscs	G2P1L1	07-11-2019	16/4/2020	38WK3D	NO	NO	NO	NO	4.41	37WKS	NO	2.8KG	7.00	8.00	12	3.35	PRESENT	PRESENT	PRESENT	NOT YET	IMMITATES SOUNDS NOT YET	PRESENT	PRESENT	PRESENT
25	04-07-2020	1009186	23YRS	Savada	REG	ftemglscs	PRIMI	07-04-2019	04-11-2020	39WK5D	NO	NO	NO	NO	6.53	39WK1D	T.THYRO 50MCG	2.9KG	7.00	8.00	11.3	0.49	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
26	04-08-2020	1009269	27YRS	Belagavi	REG	ftemglscs	g3p2l1	07-08-2019	13/4/2020	39WK2D	NO	NO	NO	NO	4.86	38WK2D	T.THYRO 25MCG	3.2KG	6.00	9.00	15.5	1.78	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
27	04-09-2020	1009281	26YRS	Kholapur	REG	FTND	PRIMI	26/6/2019	04-01-2020	41WK4D	NO	NO	NO	NO	4.86	41WK4D	T.THYRO 25MCG	2.8KG	7.00	8.00	1.1	8.56	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
28	14/4/2020	1009522	24YRS	Belagavi	REG	FTND	G2P1L2	14/7/2019	19/4/2020	39WK2D	NO	NO	NO	NO	7.56	39WK2D	T.THYRO 50MCG	2.6KG	8.00	9.00	2.7	3.72	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
29	14/4/2020	1009524	26YRS	Belagavi	REG	ftemglscs	PRIMI	07-12-2019	17/4/2020	39wk4d	NO	NO	NO	NO	7.26	39WK4D	T.THYRO 75MCG	2.9KG	8.00	9.00	14	2.02	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
30	15/4/2020	1009616	22YRS	Belagavi	UR	FTND	PRIMI	07-05-2019	04-10-2020	40WK5D	NO	NO	NO	NO	4.76	36WK4D	T.THYRO 25MCG	2.7KG	8.00	9.00	12.8	1.59	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
31	17/4/2020	1007654	28yrs	Belagavi	REG	Ftemg lscs	G2P1L1	20/7/2019	25/4/2020	39WKS	NO	No	NO	NO	4.16	34wk4D	T.THYRO 25MCG	3.4KG	7.00	9.00	21.5	7.83	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
32	20/4/2020	1009837	23YRS	Kholapur	REG	FT VENTOUSE DELIVERY	PRIMI	07-07-2019	04-12-2020	41WKS	NO	NO	NO	NO	5.53	37WK2D	T.THYRO 50MCG	2.7KG	8.00	9.00	11.3	7.33	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
33	22/4/2020	1009909	26YRS	Belagavi	REG	Ftforcepsdelivery	G2A1	19/7/2019	24/4/2020	39WK5D	NO	NO	NO	NO	6.7	31WK5D	T.THYRO 75MCG	2.9KG	7.00	8.00	15	5.62	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
34	24/4/2020	1010004	24YRS	Belagavi	REG	FTND	PRIMI	16/7/2019	21/4/2020	40WK4D	NO	NO	NO	NO	6.25	40WK4D	T.THYRO 50MCG	3.1KG	7.00	8.00	16.9	2.05	PRESENT	PRESENT	PRESENT	PRESENT	COOING NOT YET	PRESENT	PRESENT	PRESENT
35	24/4/2020	1010023	22YRS	Belagavi	REG	Ftemg lscs	PRIMI	30/7/2019	05-05-2020	41WK2D	NO	NO	NO	NO	9.43	39WK4D	T.THRO 100MCG	3.3KG	6.00	7.00	15.3	1.01	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
36	27/04/2020	1010257	26YRS	Belagavi	REG	Ftemglscs	G3P1L1A1	08-07-2019	13/05/2020	37WK6D	NO	NO	NO	NO	6.06	35WK	T.THYRO 50MCG	2.7KG	8.00	9.00	10.7	3.1	PRESENT	PRESENT	PRESENT	PRESENT	COOING NOT YET,REST WNL	PRESENT	PRESENT	PRESENT
37	27/4/2020	1010133	26YRS	Belagavi	REG	Ftemg lscs	PRIMI	29/7/2019	05-04-2020	39WK	NO	NO	NO	NO	5.67	38WK	T.THYRO 25MCG	2.7KG	7.00	8.00	10.7	0.68	PRESENT	PRESENT	PRESENT	PRESENT	WNL	NOT YET	PRESENT	PRESENT
38	05-01-2020	1010427	29YRS	Belagavi	UNREG	FT LSCS	G2A1	UNKNOWN	16/05/2020	37WK6D	NO	NO	NO	NO	6.14	37WK6D	T.THYRO 50MCG	2.8KG	7.00	8.00	23.8	1.08	PRESENT	PRESENT	PRESENT	PRESENT	NOT YET, REST WNL	PRESENT	PRESENT	PRESENT
39	05-04-2020	1010632	35YRS	Belagavi	UNREG	Ftemg lscs	G3P2L1A1	15/8/19	25/5/2020	37WK4D	NO	NO	NO	NO	4.2	32WK6D	T.THYRO 25MCG	2.6KG	8.00	9.00	11	0.27	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
40	05-07-2020	1010827	24YRS	Belagavi	REG	FTND	PRIMI	30/7/2019	05-05-2020	38WK2D	NO	NO	NO	NO	5.8	30WK	T.THYRO 25MCG	3.1KG	7.00	8.00	12.8	7.2	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
41	16/05/2020	1011533	34YRS	Belagavi	REG	Ftemg lscs	G2P1L1	27/9/2019	27/06/2020	37WKS	NO	NO	NO	NO	20.26	35WKS	T.THYRO 125MCG	2.9KG	7.00	8.00	11.7	6.66	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT

42	16/05/2020	1011163	24YRS	Belagavi	REG	FTND	PRIMI	14/8/2019	20/05/2020	38WKS 6D	NO	NO	NO	NO	7.96	29WKS	T.THYRO 75MCG	2.68KG	8.00	9.00	13.7	1.64	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
43	05-06-2020	1011469	24YRS	Belagavi	REG	Ftemg lscs	PRIMI	19/8/2019	25/05/2020	38WKS 6D	NO	NO	NO	NO	5.92	30WKS	T.THYRO 25MCG	2.9KG	6.00	8.00	11.6	1.59	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
44	17/05/2020	1011575	35YRS	Belagavi	REG	Ftemg lscs	G2P1	09-08-2019	19/6/2020	37WKS 2D	NO	NO	NO	NO	6.51	30WKS 4D	T.THYRO 50MCG	2.8KG	6.00	8.00	14.2	3.16	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
45	19/5/2020	1012020	29YRS	Belagavi	UNREG	Ftemg lscs	G2A1	14/9/2019	28/6/2020	39WKS 4D	NO	NO	NO	NO	4.8	34WK	T.THYRO 25MCG	2.6KG	7.00	8.00	9	1.6	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
46	19/5/2020	1011789	24YRS	Belagavi	REG	Ftemg lscs	PRIMI	UNKNOWN	20/5/2020	39WK6D	NO	NO	NO	NO	4.14	39WK6D	T.THYRO 25MCG	2.5KG	6.00	7.00	16	3.23	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	NOT YET	NOT YET
47	22/5/2020	1012453	23YRS	Bailhongal	REG	Ft elective lscs	PRIMI	UNKNOWN	21/7/2020	40WK	NO	NO	NO	NO	5.2	30WK	T.ELTROXIN 75mcg	2.9KG	7.00	8.00	13	12	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
48	28/5/2020	1012685	23YRS	karnataka	UNREG	FTND	G4P2L3	07-10-2019	25/6/2020	37WK2D	NO	NO	NO	NO	5.5	31WK4D	T.THYRO 50MCG	3.0KG	7.00	8.00	12.5	3.49	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
49	05-09-2020	1012977	27YRS	Gadag	REG	Ftemg lscs	G2A1	28/8/2019	06-03-2020	39WK3D	NO	NO	NO	NO	6.2	30WK6D	T.THYRO 75MCG	3.1KG	8.00	9.00	18.1	6.33	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
50	30/5/2020	1012975	26YRS	Belagavi	REG	FTND	PRIMI	09-12-2019	18/6/2020	37WK2D	NO	NO	NO	NO	6.09	37WKS 2D	T.THYRO 50MCG	2.9KG	8.00	9.00	13.2	0.49	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
51	06-09-2020	1014121	29YRS	Belagavi	REG	FTND	G3P2L2	09-01-2019	06-06-2020	40WK2D	NO	NO	NO	NO	4.11	30WK	T.THYRO 50MCG	3KG	8.00	9.00	8.9	3.4	PRESENT	PRESENT	PRESENT	PRESENT	COOING NOT YET	PRESENT	PRESENT	PRESENT
52	06-12-2020	1014483	23YRS	Belagavi	REG	Ftemg lscs	PRIMI	09-02-2019	06-08-2020	40WK4D	NO	NO	NO	NO	5	40WK4D	T.THYRO 50MCG	3.0KG	7.00	9.00	1.84	0.75	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
53	06-12-2020	1014486	22YRS	karnataka	REG	Ftemg lscs	G2P1L1	09-05-2019	06-11-2020	40WK1D	NO	NO	NO	NO	6.38	40WK1D	T.THYRO 25MCG	2.9KG	7.00	9.00	1.52	0.46	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
54	13/6/2020	1014615	21YRS	Maharastra	UNREG	FTND	PRIMI	09-10-2019	16/6/2020	39WK4D	NO	NO	NO	NO	6.18	39WK4D	T.THYRO 25MCG	2.9KG	8.00	9.00	2.35	2.98	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
55	17/6/2020	1015296	20YRS	karnataka	UNREG	Ftemg lscs	PRIMI	09-04-2019	29/6/2020	41WK	NO	NO	NO	NO	5.21	41WK	T.THYRO 50MCG	2.6KG	7.00	9.00	18	2.75	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
56	06-09-2020	1015601	21YRS	Belagavi	REG	Ftemg lscs	PRIMI	15/9/2019	21/6/2020	39WK5D	NO	NO	NO	NO	4.64	31WK 2D	T.THYRO 25MCG	2.9KG	7.00	9.00	9.7	1.48	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT	PRESENT
57	20/6/2020	1015653	30YRS	karnataka	REG	Ftemg lscs	G2P1L1	29/9/2019	07-05-2020	37WK6D	NO	NO	NO	NO	5.97	26WKS	T.THYRO 75MCG	2.8kg	8.00	9.00	2.15	2.74	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
58	21/6/2020	1015719	22YRS	karnataka	UNREG	Ftemg lscs (msl)	G2P1L1	20/9/2020	26/6/2020	39WK2D	NO	NO	NO	NO	4.42	34wk2D	T.THYRO 25MCG	2.8KG	7.00	9.00	1.26	0.46	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
59	27/6/2020	1016613	22YRS	karnataka	REG	FTND	G3P0L0A2	10-06-2019	07-12-2020	37WK6D	NO	NO	NO	NO	4.32	33wk1d	T.THYRO 50MCG	2.8KG	7.00	8.00	2.34	6.14	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
60	07-03-2020	1015456	24YRS	karnataka	UNREG	FTND	G2P1L1	15/9/2019	21/6/2020	39WK5D	NO	NO	NO	NO	4.9	39wk3d	T.THYRO 25MCG	3.4KG	7.00	9.00	15.2	3.6	PRESENT	PRESENT	PRESENT	PRESENT	COOING NOT YET	PRESENT	PRESENT	PRESENT
61	07-04-2020	1017582	20YRS	karnataka	REG	Ftemg lscs (fetal distress)	G2A1	10-04-2019	07-10-2020	39WKS	NO	NO	NO	NO	5.72	38WKS	T.THYRO 50MCG	2.5KG	8.00	9.00	3.21	1.91	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
62	14/7/2020	1018674	20YRS	karnataka	REG	Ft forceps	PRIMI	23/10/2019	14/8/2020	37WKS	NO	NO	NO	NO	4.24	33WKS	T.THYRO 25MCG	2.6KG	7.00	9.00	11.1	2.21	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
63	24/7/2020	10119529	26YRS	karnataka	REG	FTND	G3P1L1A1	11-05-2019	08-11-2020	37WKS 3D	NO	NO	NO	NO	10.6	33wks3d	T.THYRO 150MCG	3.0KG	8.00	9.00	11.6	1.45	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
64	08-02-2020	1020126	26YRS	karnataka	REG	Ft emg lscs	PRIMI	11-07-2019	13/9/2020	38WK 3D	NO	NO	NO	NO	4.2	36WK2D	NO	3.8KG	6.00	7.00	10.2	0.52	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT

65	08-02-2020	1020150	32YRS	karnataka	UNREG	Ft elective lscs	G2P1L1	11-08-2019	14/8/2020	38WK2D	NO	NO	NO	NO	4.2	30WKS	T.ELTROXIN 75mcg	2.75KG	8.00	9.00	1.52	7.17	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
66	08-03-2020	1020173	23YRS	karnataka	REG	Ft emg lscs	PRIMI	30/10/2019	08-05-2020	38WK 2D	NO	NO	NO	NO	9.23	38wks2d	T.THYRONORM 75mcg	2.8KG	6.00	8.00	2.21	18.02	PRESENT	PRESENT	PRESENT	PRESENT	COOING NOT YET	PRESENT	PRESENT	PRESENT
67	08-03-2020	1020222	29YRS	karnataka	REG	Ft emg lscs	G2A1	19/11/2019	25/8/2020	36WK6D	NO	NO	NO	NO	4.1	33wk1d	NO	3.1KG	8.00	9.00	14.9	1.43	PRESENT	PRESENT	PRESENT	PRESENT	COOING NOT YET	PRESENT	PRESENT	PRESENT
68	08-04-2020	1020302	26YRS	karnataka	REG	FTND	G2P1L1	29/10/2019	08-01-2020	40WK	NO	NO	NO	NO	4.7	36WK	T.THYRO 25MCG	3.75KG	8.00	9.00	7.6	5.7	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
69	08-06-2020	1020441	33YRS	karnataka	REG	FTND	G2P1L1	11-04-2019	08-10-2020	39WK3D	NO	NO	NO	NO	6.8	38wks4d	T.THYRO 50MCG	3.32KG	6.00	7.00	10.9	7.47	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
70	13/8/2020	1020866	28YRS	karnataka	REG	FTND	G4P1L1A2	11-11-2019	17/8/2020	39WK3D	NO	NO	NO	NO	7.2	37wks3d	T.THYRO 50MCG	2.7KG	7.00	9.00	3.4	6.6	PRESENT	PRESENT	PRESENT	PRESENT	COOING NOT YET	PRESENT	PRESENT	PRESENT
71	16/8/2020	1021066	24YRS	karnataka	UNREG	Ft emg lscs	PRIMI	11-02-2019	8/82020	41WK1D	NO	NO	NO	NO	8.94	41WK1D	T.THYRO 50MCG	3.4KG	7.00	8.00	17	0.69	PRESENT	PRESENT	PRESENT	PRESENT	COOING NOT YET	PRESENT	PRESENT	PRESENT
72	20/8/2020	1021408	24YRS	karnataka	REG	Ft emg lscs	G4P1L1A2	12-05-2019	09-12-2020	37WK	NO	NO	NO	NO	5.27	37WK	T.THYRO 50MCG	2.5KG	8.00	9.00	19.2	2.21	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
73	23/8/2020	1021538	36YRS	karnataka	REG	Ft emg lscs	G2A1	UNKNOWN	09-01-2020	38WK 5D	NO	NO	NO	NO	5.2	30 WEEKS	T.THYRO 50MCG	2.5KG	7.00	9.00	21.7	1.34	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
74	23/8/2020	1021532	24YRS	karnataka	REG	FTND	PRIMI	27/11/2019	09-02-2020	38WK 4D	NO	NO	NO	NO	4.5	36WK	T.THYRO 50MCG	2.2KG	7.00	9.00	2.24	4.31	PRESENT	PRESENT	PRESENT	PRESENT	IMITATES SOUNDS, NOT YET	PRESENT	PRESENT	PRESENT
75	27/8/2020	1021861	30YRS	karnataka	REG	Ft emg lscs	PRIMI	02-04-2019	09-09-2020	38wks1D	NO	NO	NO	NO	6.2	35WKS 3D	T.THYRO 50MCG	3.0KG	8.00	9.00	18.3	1.89	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
76	09-03-2020	1022278	30YRS	Kittur	UNREG	FTND	G2P1L1	28/12/2019	10-03-2020	37WKS	NO	NO	NO	NO	5.09	33WKS	T.THYRO 25MCG	2.5KG	7.00	9.00	17.4	9.23	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
77	09-06-2020	1022553	26YRS	karnataka	REG	Ft emg lscs	G3A2	12-03-2019	09-10-2020	39WK5D	NO	NO	NO	NO	8.86	35WK6D	T.THRO 100MCG	3.3KG	6.00	7.00	19.3	3.64	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
78	09-07-2020	1022656	29YRS	Belagavi	REG	Ft emg lscs	G2P1L1	12-06-2019	09-11-2020	39WK3D	NO	NO	NO	NO	7.79	29WKS	T.THYRO 50MCG	3.1KG	7.00	8.00	13	4	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
79	09-08-2020	1022688	20YRS	karnataka	UNREG	FTND	PRIMI	26/11/19	09-11-2020	39WK6D	NO	NO	NO	NO	7.94	39WK6D	T.THYRO 50MCG	2.9KG	7.00	9.00	15.1	5.2	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	NOT YET
80	09-10-2020	1024122	26YRS	Belagavi	REG	FTND	PRIMI	26/10/2019	08-12-2020	38WK2D	NO	NO	NO	NO	5.7	38WK	T.THYRO 25MCG	3.2KG	7.00	8.00	1.53	2.21	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
81	16/9/2020	1023316	33YRS	Maharastra	REG	Ft emg lscs	PRIMI	01-02-2020	10-08-2020	37WKS	NO	NO	NO	NO	5.2	33WK6D	T.THYRO 50MCG	2.3KG	6.00	8.00	14.7	5.36	PRESENT	PRESENT	PRESENT	PRESENT	SPONTANEOUS LAUGH NOT YET	PRESENT	PRESENT	NOT YET
82	16/9/2020	1023352	29YRS	Belagavi	REG	Ft emg lscs	G2P1L1	11-06-2019	30/8/2020	38WKS	NO	NO	NO	NO	4.89	36WK4D	T.THYRO 12.5MCG	2.4KG	6.00	8.00	15.9	1.15	PRESENT	PRESENT	PRESENT	PRESENT	IMITATES SOUNDS, NOT YET	PRESENT	PRESENT	NOT YET
83	18/9/2020	1023429	27YRS	karnataka	UNREG	Ft emg lscs	PRIMI	12-12-2019	17/9/2020	40WKS	NO	NO	NO	NO	4.75	36WK	T.THYRO25MCH	2.9KG	8.00	9.00	12.1	6.4	PRESENT	PRESENT	PRESENT	PRESENT	COOING NOT YET	PRESENT	PRESENT	PRESENT
84	26/9/2020	1024093	34YRS	karnataka	REG	Ft emg lscs	PRIMI	26/12/2019	10-01-2020	39WK2D	NO	NO	NO	NO	6.7	35WK	T.THYRO25MCG	3.3KG	7.00	8.00	8.8	2.39	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
85	10-04-2020	1024656	36YRS	Belagavi	REG	Ft emg lscs	G4P1L1A2	01-01-2020	15/10/2020	38WK3D	NO	NO	NO	NO	4.4	35WK1D	T.THYRO 12.5MCG	3.15KG	6.00	8.00	1.73	1.34	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
86	10-09-	102506	35Y	Belagavi	UNRE	Ft elective	G2A1	27/1/2020	11-08-	38WK4	NO	NO	NO	NO	5.9	34WK4	T.THYRO	2.3K	7.00	9.00	12.7	2.7	PRESE	PRESE	PRESE	PRESE	WNL	PRESE	PRESE	PRESE

	2020	7	RS		G	lscs			2020	D						D	12.5MCG	G					NT	NT	NT	NT		NT	NT	NT
87	10-11-2020	1025176	25YRS	karnataka	REG	Ft emg lscs	PRIMI	02-05-2020	11-11-2020	37WKS	NO	NO	NO	NO	4.71	34WKS	T.THYRO 50MCG	2.4KG	6.00	7.00	2.03	0.95	PRESENT	PRESENT	PRESENT	PRESENT	IMMITATES SOUNDS NOT YET	PRESENT	PRESENT	PRESENT
88	16/10/2020	1022564	30YRS	Belagavi	REG	Ft emg lscs	G3P2L2	25/1/2020	31/10/2020	38WK1D	NO	NO	NO	NO	4.56	31WKS	T.THYRO 25MCG	3.2KG	6.00	8.00	1.21	0.39	PRESENT	PRESENT	PRESENT	PRESENT	COOING NOT YET	PRESENT	PRESENT	PRESENT
89	17/10/2020	1025637	28YRS	karnataka	REG	Ft elective lscs	PRIMI	01-07-2020	13/10/2020	40WK4D	NO	NO	NO	NO	6.1	36WK4D	T.THYRO 75MCG	3.1KG	7.00	8.00	12.4	9.62	PRESENT	PRESENT	PRESENT	PRESENT	IMMITATES SOUNDS NOT YET	PRESENT	PRESENT	PRESENT
90	20/10/2020	1025881	25YRS	karnataka	REG	Ft elective lscs	G3P2L2	28/1/2020	11-03-2020	38WKS	NO	NO	NO	NO	4.25	36WK	T.THYRO 12.5MCG	2.7KG	8.00	9.00	6.7	4.41	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
91	23/10/2020	1026158	28YRS	karnataka	REG	Ft elective lscs	G3P1A1	02-04-2020	11-10-2020	37WK3D	NO	NO	NO	NO	5.2	33WK3D	T.THYRO 50MCG	2.9KG	9.00	10.00	12.7	5.67	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
92	11-03-2020	1026955	39YRS	karnataka	REG	Ft emg lscs	PRIMI	02-11-2020	17/11/2020	38WKS	No	NO	NO	NO	5.8	38WKS	T.THYRO 25MCG	2.8KG	7.00	8.00	13.6	0.6	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
93	11-04-2020	1027127	23yRS	karnataka	UNREG	Ft elective lscs	G2P1L1	02-08-2020	14/11/2020	38WK 4D	NO	NO	NO	NO	4.32	38WK4D	T.THYRO 25mcg	2.6KG	7.00	8.00	9.9	3.52	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
94	11-06-2020	1027325	28YRS	Belagavi	REG	FT VENTOUSE DELIVERY	G2P1L1	24/1/2020	30/10/2020	41 WK	NO	NO	NO	NO	4.42	28WK	T.THYRO 25MCG	3.3KG	8.00	9.00	4.92	5.84	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
95	11-08-2020	1027428	27YRS	Belagavi	UNREG	FTND	G3P2L1D1	03-08-2020	13/12/2020	37WK	NO	NO	NO	NO	5.63	37WEEKS	T.THYRO 25MCG	2.3KG	7.00	9.00	1.94	4.07	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
96	11-09-2020	1027578	38YRS	karnataka	UNREG	FT EMg lscs	G2A1	27/2/2020	12-03-2020	37WK 4D	NO	NO	NO	NO	7.9	32WK	T.THYRO 75MCG	2.7KG	7.00	9.00	6	0.95	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
97	11-10-2020	1027687	23YRS	RAIBAG	UNREG	Ft elective lscs	G3P1L1A1	02-11-2020	17/11/2020	39WK1D	NO	NO	NO	NO	12.8	36WK	T.THYR0 125MCG	3.4KG	7.00	8.00	14.7	9.09	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
98	19/11/2020	1028501	28YRS	karnataka	UNREG	Ft elective lscs	G2P1D1	25/2/2020	12-01-2020	38WK2D	NO	NO	NO	NO	4.9	36WK	T.THYRO 25MCG	3KG	6.00	8.00	1.58	5.71	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
99	20/11/2020	1028577	30YRS	Belagavi	REG	Ft emg lscs	PRIMI	05-01-2020	12-06-2020	37WK 5D	NO	NO	NO	NO	4.2	34WK	T.THYRO 12.5MCG	2.8KG	8.00	9.00	2.03	9.33	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
100	20/11/2020	1028578	28YRS	karnataka	REG	Ft emg lscs	G2A1	14/12/2020	20/11/2020	40WKS	NO	NO	NO	NO	5.76	38WK	T.THYRO 25MCG	3.25KG	7.00	8.00	10.5	0.67	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
101	26/11/2020	1029332	22YRS	karnataka	UNREG	Ft emg lscs	G3P1L1A1	03-02-2020	12-09-2020	38WK 43D	NO	NO	NO	NO	4.67	38WK 3D	T.THYRO 75MCG	2.8KG	8.00	9.00	10.7	0.47	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
102	28/11/2020	1029504	25YRS	karnataka	UNREG	FTND	G2P1L1	05-04-2020	21/1/2021	38WK 3D	NO	NO	NO	NO	5.2	38WK3D	T.THYRO 25MCG	2.3KG	7.00	8.00	1.34	2.42	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
103	30/11/2020	1029607	22YRS	karnataka	REG	Ft EMg lscs	PRIMI	29/3/2020	12-03-2020	37WK 1D	NO	NO	NO	NO	4.02	30WKS	T.THYRO 25MCG	2.4KG	7.00	8.00	11.3	1.78	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
104	12-01-2020	1029806	25YRS	karnataka	REG	Ft emg lscs	G2P1L1	02-07-2020	12-03-2020	39WK 5D	NO	NO	NO	NO	4.58	28WK	T.THYRO 88MCG	2.8KG	8.00	9.00	13.3	4.34	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
105	12-03-2020	1030023	29YRS	Belagavi	UNREG	Ft elective lscs	PRIMI	03-10-2020	15/12/2020	38wk 2D	NO	NO	NO	NO	6.8	38WK	T.THYRO 25MCG	2.7KG	7.00	8.00	10.2	3.47	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
106	12-10-2020	1030869	20YRS	karnataka	REG	Ft elective lscs	G3A2	18/3/2020	23/12/2020	38WK1D	NO	NO	NO	NO	17.8	34WK	T.THYRO 150MCG	2.5KG	7.00	8.00	1.68	0.57	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
107	13/12/2020	1031160	23YRS	karnataka	REG	Ft emg lscs	PRIMI	03-10-2020	15/12/2020	39WK5D	NO	NO	NO	NO	4.68	39WK 2D	T.THYRO 75MCG	3.4KG	5.00	8.00	1.22	0.82	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
108	14/12/2020	1031238	30YRS	NIDONI	REG	Ft emg lscs	G4P2L2A1	03-01-2020	28/12/2020	38WK	NO	NO	NO	NO	4.31	33WK3D	T.THYRO 25MCG	2.3KG	6.00	7.00	10.4	6.18	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
109	26/12/20	103269	20Y	karnataka	UNRE	FTND	PRIMI	16/4/2020	21/1/202	37WEE	NO	NO	NO	NO	4.45	37WK	T.THYRO	2.7K	7.00	8.00	1.95	0.74	PRESE	PRESE	PRESE	PRESE	WNL	PRESE	PRESE	PRESE

	20	9	RS		G				1	KS							50MCG	G					NT	NT	NT	NT		NT	NT	NT
110	31/12/2020	1036068	35YRS	karnataka	UNREG	ftemglscs	G3P1L1A1	UNKNOWN	29/1/2021	37WEEKS	NO	NO	NO	NO	6.2	37WK	T.THYRO 50MCG	3.2KG	8.00	9.00	2.59	4.42	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
111	01-11-2021	1034738	27YRS	karnataka	UNREG	FTND	G4P3L3	20/4/2020	25/1/2021	38WK	NO	NO	NO	NO	11.4	38WK	T.THYRO 75MCG	2.5KG	7.00	8.00	1.63	6.15	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
112	21/1/2021	1036068	37YRS	KARnataka	UNREG	Ft emg lscs	G4P2L1A1	20/05/2020	24/2/2021	37WK 1D	NO	NO	NO	NO	7.66	34WK	T.THYRO 50MCG	3.1KG	7.00	9.00	14.7	3.84	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
113	24/1/2021	1036413	24YRS	karnataka	UNREG	FTND	G2P1L1	25/04/2020	31/1/2021	39WK 1D	NO	NO	NO	NO	5.17	39WK 1D	T.THYRO 75MCG	2.95KG	8.00	9.00	2.1	4.03	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
114	02-01-2021	1037589	27YRS	karnataka	REG	FTND	G3P2L2	28/06/2020	02-02-2021	39WK 5D	NO	NO	NO	NO	4	33WK 5D	T.THYRO 50MCG	2.7KG	7.00	8.00	13.2	0.67	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
115	02-01-2021	1037551	23YRS	karnataka	UNREG	Ft elective lscs	G3P1LÀ1	26/04/2020	02-10-2021	37WK 3D	NO	NO	NO	NO	4.2	32WK 6D	T.THYRO 50MCG	3.2KG	7.00	8.00	2.22	9.7	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
116	02-01-2021	1037578	23yrs	karnataka	REG	Ft elective lscs	g2p1l1	14/4/2020	02-07-2021	39Wk 1D	NO	NO	NO	NO	5.2	36WK 1D	T.THYRO 25MCG	2.8KG	8.00	9.00	1.4	1.71	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
117	02-01-2021	1038008	26YRS	karnataka	UNREG	Ft emg lscs	G2P1L1	05-08-2020	18/2/2021	37WK 6D	NO	NO	NO	NO	8.7	37WK 6D	T.THYRO 50MCG	2.5KG	6.00	7.00	2.14	12.61	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	NOT YET	NOT YET
118	02-05-2021	1038315	21YRS	KARnataka	UNREG	Ft emg lscs	primi	UNKNOWN	13/2/2021	37wk	NO	NO	NO	NO	7.1	36WK	T.THYRO 50MCG	2.6KG	8.00	9.00	1.86	0.71	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
119	02-05-2021	1038224	24YRS	KARnataka	UNREG	FTND	G2P1L1	19/5/2020	02-06-2021	39WK 6D	NO	NO	NO	NO	5.39	32WK	T.THYRO 50MCG	3.2KG	7.00	9.00	9.2	1.39	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
120	02-08-2021	1038653	21YRS	KARNataka	UNREG	Ft elective lscs	G3P1L1A1	13/6/2020	23/3/2021	37WK 2D	NO	NO	NO	NO	6.2	37WK 2D	T.THYRO 75MCG	2.9KG	8.00	10.00	4.3	8.3	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
121	02-09-2021	1038705	25YRS	karnataka	REG	Ft emg lscs	G3P2L2	29/04/2021	15/2/2021	39WK	NO	NO	NO	NO	5.65	30WK 2D	T.THYRO 50MCG	2.8KG	7.00	9.00	2.32	2.82	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
122	02-11-2021	1039152	22YRS	karnataka	UNREG	Ft emg lscs	G2P1L1	05-12-2020	16/2/2021	39WK 2D	NO	NO	NO	NO	4.2	38WK 2D	T.THYRO 12.5MCG	3.1KG	8.00	10.00	1.29	0.43	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
123	02-12-2021	1039204	26YRS	PUNE	REG	FTND	G2P1L1	26/4/2020	13/2/2021	38WK	NO	NO	NO	NO	4.6	38WK	NO	3.1KG	7.00	8.00	14.5	7.32	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
124	13/2/2021	1039604	23YRS	HUBLI	REG	FTND	PRIMI	05-10-2020	15/2/2021	37WK	NO	NO	NO	NO	6.8	34WK	T.THYRO 50MCG	2.8KG	6.00	7.00	2.3	3.01	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
125	14/2/2021	1039556	26YRS	Belagavi	UNREG	Ft emg lscs	G2P1L1	16/6/2020	13/3/2021	37WKS	NO	NO	NO	NO	4.92	32WK	T.THYRO 12.5MCG		6.00	8.00	7.2	0.82	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
126	16/2/2021	1039907	24YRS	HUBLI	UNREG	Ft emg lscs	primi	05-12-2020	16/2/2021	38wks	NO	NO	NO	NO	4.43	38WK	T.THYRO 25MCG	3KG	7.00	8.00	2.13	0.9	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
127	16/2/2021	1039791	23YRS	Belagavi	UNREG	Ft electivelscs	G3P1L1A1	27/5/2020	03-03-2021	37WK 6D	NO	NO	NO	NO	5.2	30WK	T.THYRO 50MCG	3.1KG	7.00	9.00	10.8	1.14	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
128	17/2/2021	1039972	23YRS	karnataka	UNREG	FTND	G2P1L1	14/5/2020	18/2/2021	39WK 6D	NO	NO	NO	NO	4.9	39WK 6D	T.THYRO 50MCG	3.3KG	7.00	9.00	10.5	0.52	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	NOT YET
129	20/2/2021	1040606	34YRS	karnataka	UNREG	Ft emg lscs	primi	06-02-2020	03-09-2021	37WK 4D	NO	NO	NO	NO	4.2	37WK 4D	T.THYRO 25MCG	3.4KG	7.00	8.00	16	0.61	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
130	25/2/2021	1041406	24YRS	karnataka	REG	FTND	PRIMI	31/5/2020	03-07-2021	38WK 4D	NO	NO	NO	NO	4	29WK 6D	T.THYRO 75MCG	2.8KG	8.00	9.00	11	9.95	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
131	25/2/2021	1041364	29YRS	KARnataka	UNREG	FT VENTOUSE DELIVERY	PRIMI	30/5/2020	03-06-2021	38WK 5D	NO	NO	NO	NO	4.3	36WK 5D	T.THYRO 25MCG	2.8KG	7.00	8.00	11.7	0.48	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
132	03-07-2021	1042923	26YRS	karnataka	UNREG	FT VENTOUSE DELIVERY	G2P1L1	06-08-2020	15/3/2021	38WK 5D	NO	NO	NO	NO	7.06	38WK 5D	T.THYRO 100MCG	3.2KG	6.00	8.00	3.4	9.4	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT

133	03-07-2021	1042929	24YRS	karnataka	UNREG	FTND	G2P1L1	06-10-2020	18/3/2021	38WK 4D	NO	NO	NO	NO	4.79	38WK 4D	T.THYRO 25MCG	2.6KG	7.00	8.00	10.1	13	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
134	03-08-2021	1043204	26YRS	karnataka	UNREG	Ft emg lscs	primi	26/5/2020	03-12-2021	39wk 3d	NO	NO	NO	NO	5.2	32WK	T.THYRO 25MCG	2.7KG	8.00	9.00	2.96	2.66	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
135	03-11-2021	1043615	22YRS	Belagavi	REG	FT emg lscs	G3P1L1A1	20/6/2020	24/3/2021	38WK1D	NO	NO	NO	NO	7.9	29WSK	T.THYRO 100MCG	2.8KG	6.00	8.00	8	4.14	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
136	13/3/2021	1043392	28YRS	karnataka	REG	Ft elective lscs	G4P2L2A1	17/5/2020	27/3/2021	37WK 3D	NO	NO	NO	NO	6.8	34WK	T.THYRO 25MCG	3.4KG	7.00	8.00	11.1	4.93	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
137	28/3/2021	1046798	30YRS	karnataka	UNREG	Ft emg lscs	g3p1l1a1	07-12-2020	26/7/2021	37wk	NO	NO	NO	NO	5.4	29WK	T.THYRO 25MCG	3.1KG	8.00	9.00	10	0.93	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT
138	28/3/2021	1046757	26YRS	karnataka	UNREG	FTND	PRIMI	27/6/2020	04-03-2021	38WK 2D	NO	NO	NO	NO	4.8	32WK	T.THYRO 25MCG	2.8KG	6.00	8.00	2.2	8.11	PRESENT	PRESENT	PRESENT	PRESENT	WNL	PRESENT	PRESENT	PRESENT