IMPACT OF PREEXISTING AND NEWLY DETECTED MATERNAL HYPOTHYROIDISM ON MATERNAL AND PERINATAL OUTCOMES DURING PREGNANCY, AN OBSERVATIONAL STUDY

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LIST OF ABBREVIATIONS

TSH- THYROID STIMULATING HORMONE

FT4- FREE THYROXINE

T3- TRIIODOTHYRONINE

T4- THYROXINE

TPO- THYROID PEROXIDASE

TPOA- THYROID PEROXIDASE ANTIBODY

TGA- THYROGLOBULIN ANTIBODIES

APGAR- APPEARANCE, PULSE, GRIMACE, ACTIVITY, RESPIRATION

IU/ML- INTERNATIONAL UNITS PER MILILITRE

TBG- THYROID BINDING GLOBULIN

HCG- HUMAN CHORIONIC GONADOTROPIN

SCH- SUBCLINICAL HYPOTHYROIDISM

DM- DIABETES MELLITUS

ATP- ADENOSINE TRIPHOSPHATE

IGF- INSULIN-LIKE GROWTH FACTOR

GH- GROWTH HORMONE

HTN- HYPERTENSION

PPH- POSTPARTUM HEMORRHAGE

HCT- HUMAN CHORIONIC THYROTROPIN

ACOG- AMERICAN COLLEGE OF OBSTETRICS AND GYNECOLOGY

FGR- FETAL GROWTH RESTRICTION

NICU- NEONATAL INTENSIVE CARE UNIT

LGA- LARGE FOR GESTATIONAL

SGA- SMALL FOR GESTATIONAL AGE

BMI- BODY MASS INDEX

LT4- LEVOTHYROXINE

BMR- BASAL METABOLIC RATE

CNS- CENTRAL NERVOUS SYSTEM

µg- MICRO GRAMS

I^{131}- IODINE ION 131

SH-R- SHORTROOT

POG- PERIOD OF GESTATION

CLIA- CHEMILUMINESCENCE IMMUNO ASSAY

ATA- AMERICAN THYROID ASSOCIATION

ELFA- ENZYME LINKED FLURESCENT ASSAY

TSB- TOTAL SERUM BILIRUBIN

SD- STANDARD DEVIATION

CBC- COMPLETE BLOOD COUNT

PE- PRE-ECLAMPSIA

PTD- PRETERM DELIVERY

FGR- FETAL GROWTH RESTRICTION

IUD- INTRAUTERINE DEATH

MAS- MECONIUM ASPIRATION SYNDROME

AGE- ACUTE GASTROENTERITIS

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ABSTRACT

Background

It is well-known that maternal hypothyroidism has a negative impact on the pregnancy's obstetrical and neonatal outcomes.

Preterm births, oligohydramnios, postpartum haemorrhage, abruption placenta, and other obstetric consequences such hypertensive diseases of pregnancy

Poor birth weight, a low APGAR score, neonatal infections, foetal mortality, and other events related to birth

Methodology

Between January 2021 to April 2022, we conducted a 1.5-year prospective observational study in which we enrolled 427 cases who were admitted to labour wards after 28 weeks of gestation in the Department of Obstetrics and Gynaecology at BLDE (DEEMED TO BE UNIVERSITY) Shri B.M. Patil's Medical College, Hospital and Research Centre, Vijayapura, following clearance from the ethics committee. All 427 patients underwent a thyroid function test to check for hypothyroidism. If the TSH level was greater than 3 micro-IU/LITRE, FT4 and TPO antibodies were supplied and classified as subclinical and overt hypothyroidism. Preterm births, oligohydramnios, postpartum haemorrhage, and hypertensive disorders of pregnancy were documented as obstetrical outcomes, and low birth weight, foetal growth restriction, intrauterine mortality, neonatal sepsis, among other neonatal events, were observed and assessed for statistical significance

Results

In our investigation, premature births (p value 0.003), abruption of the placenta (p value 0.039), and hypertensive disorders of pregnancy (p value 0.0014) were found to be clinically significant in terms of negative obstetrical outcomes.

In terms of poor new born outcomes, a low APGAR score was discovered to be clinically significant (p value-0.015).

Patients with TPO antibodies more than 0.5 IU/ML have a positive correlation with pregnancy-related hypertension problems and this correlation is clinically significant (p value- 0.015)

Conclusion

Hence Preterm births, abruption of the placenta, and hypertensive disorders of pregnancy are all common in cases of maternal hypothyroidism, which negatively impacts pregnancy in a substantial way.

Patients with maternal hypothyroidism had poorer neonatal outcomes in terms of low APGAR scores.

The prevalence of both obstetrical and neonatal outcomes is higher in mothers with maternal hypothyroidism who also have large levels of TPO antibodies.

INTRODUCTION

The thyroid goes through a stress test throughout pregnancy, and the hormonal environment of the thyroid gland will alter dramatically during this time. There are a multitude of changes seen in the gland during pregnancy that help the gland adapt to the rising metabolic demands. These changes include an increase in the size of the gland and an increase in thyroid hormone production. This increase in hormone synthesis, in turn, results in a parallel increase in iodine requirement.[1] The changes occur as a result of many physiologic events. There appears to be an oestradiol-driven increase in thyroid-binding globulin (TBG), pronounced during the first trimester and plateauing during the second and third trimesters. This leads to increased T3 and T4 binding and a concomitant reduction in free T3 and T4. In addition, the action of human chorionic gonadotropin (hCG), whose beta subunit has a structural similarity to thyroid-stimulating hormone (TSH), stimulates the TSH-receptor, resulting in an increase in T3, T4, and a decrease in TSH during the first trimester. This effect persists until the end of the first trimester. Along with these changes, there are other ones, like modifications in the peripheral metabolism of thyroid hormones and an associated increase in renal loss of iodine due to a rise in glomerular filtration rate.

TSH in the first trimester decreases as a result of these modifications, which also result in a minor decrease in free T3 and T4 and an increase in total T3 and T4. Throughout pregnancy, the levels of total T3 and T4 are raised. After mid-pregnancy, TSH and free T3/T4 levels are probably going to near to pre-pregnancy levels. [2]

Thyroid disorders are the second most common endocrinological disorders in women of reproductive age, second only to diabetes.[3] Subclinical hypothyroidism (SCH) is the most common thyroid dysfunction during pregnancy.[4] According to western data, the prevalence of hypothyroidism in pregnancy is approximately 2.5%, whereas Indian studies have shown a higher prevalence of up to 13%.[5] In SCH, the TSH level is elevated while the T4 level is normal. SCH is common during pregnancy, particularly in areas prone to iodine deficiency. Apart from iodine deficiency, the other most common cause is due to anti-TPO antibodies.[6]

Most thyroid dysfunctions are treatable but may adversely affect the mother and foetus if not evaluated and managed appropriately. Maternal adverse hypothyroidism-related events include threatened abortion, preterm labor, placental abruption, and postpartum hemorrhage.[7]

The developing fetus exclusively depends on maternal thyroid hormones during the first 12 weeks, after which the fetal thyroid gland starts producing hormones.[8] Maternal SCH can lead to poor foetal outcomes like low birth weight, foetal growth retardation, stillbirths, neonatal deaths, neonatal hyperbilirubinemia, and perinatal mortality. [7] Also, maternal SCH is associated with an increased risk of intellectual and motor developmental delay, attention deficit hyperactivity disorder, and language, vision, and hearing impairment. [9]

There is a lacuna in the studies showing the effect of hypothyroidism on foetal and maternal outcomes and the prevalence of maternal hypothyroidism. Hence, this study was undertaken to assess maternal hypothyroidism's impact on obstetrical and perinatal outcomes.

AIMS AND OBJECTIVES

AIM:

To study the effect of hypothyroidism on obstetrical and perinatal outcomes.

Objectives of the study:

To evaluate the effect of maternal hypothyroidism on obstetrical outcomes concerning

- Hypertensive disorders of pregnancy
- Abruptio placenta
- Postpartum haemorrhage
- Preterm delivery
- Oligohydramnios
- Gestational DM
- Need for Cesarean delivery
- Anemia

To evaluate the effect of maternal hypothyroidism on perinatal outcome with respect to

- Fetal growth restriction
- Intrauterine death
- Low birth weight
- Low APGAR score
- Neonatal hyperbilirubinemia
- Neonatal sepsis
- Early neonatal death

REVIEW OF LITERATURE

Development of the Thyroid Gland:

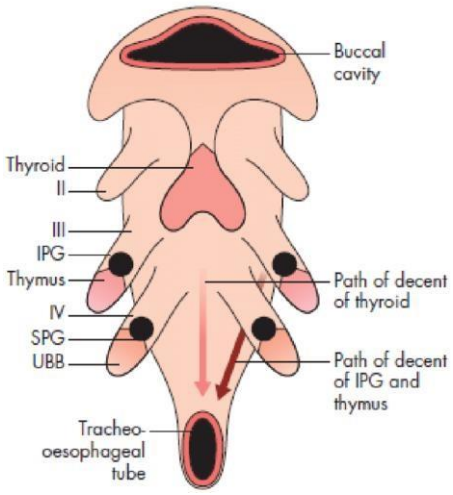


Fig 1- Thyroid gland structure

Just caudal to the tuberculum impar, a median endodermal thyroid diverticulum that grows down in front of the neck from the primitive pharynx's floor gives rise to the thyroid gland. The diverticulum's bottom end enlarges to become the gland. The thyroglossal duct is the name of the remaining, thin portion of the diverticulum. The majority of the duct soon vanishes. The position of the tongue's upper end is indicated by the foramen caecum, while the bottom end frequently endures as the pyramidal lobe. In the third month of development, the gland starts to produce hormones.

The medial and lateral thyroid anlagen, which are paired and produce calcitonin together, develop from the fourth branchial pouch and the fourth branchial pouch, respectively. In the eleventh week of pregnancy, colloid production occurs inside thyroid follicles.

At the end of the first trimester of pregnancy, throughout the life of the foetus, the thyroid gland completes its development. Before that, the only sources of thyroid hormones for the growing baby were maternal-free T4 and maybe T3 at low amounts.[10]

Between 16 and 20 weeks of gestation, the embryo will begin to secrete large amounts of thyroid hormones. The hypothalamus and pituitary are part of the regulatory feedback system, which does not fully develop until after birth. Iodine builds up in the developing thyroid, where

it is utilised to make thyroid hormones that are essential for myelination of nerve cells, brain development, and other processes throughout the foetal life. Iodine is used to create thyroid hormones and crosses the placenta.[10]

Anatomy of the Thyroid Gland:

An endocrine gland, the thyroid is located in the neck's anterior triangle (butterfly shape). It sits right below the cricoid cartilage and is made up of two lobes on either side that are joined by an isthmus. Between the sternomastoid muscle and the carotid sheath, the anterior lobes expand laterally.

The gland weighs between 6 and 20 grammes, depending on the person's body weight, age, and pregnancy status.[12]

On the back of the lateral lobe, where the thyroid gland is made up of many follicles wrapped in a capsule, are the parathyroid glands. Between 28 and 55 percent of people have a third lobe, which is now known as the pyramidal lobe of the thyroid gland. [13] The thyroglossal duct [14] is still present in the pyramidal lobe, also referred to as Lalouette's pyramid. It can occasionally separate into two or more pieces or become unattached. [15] It moves when swallowing because of its firmly fastened attachment to the trachea.

The superior thyroid artery, inferior thyroid artery, and occasionally the thyroid IMA artery, which branches off the subclavian artery, all supply blood to the thyroid.

Venous drainage: Venous blood leaves the body through the superior thyroid veins into the internal jugular vein and the inferior thyroid veins into the plexus of the left brachiocephalic vein.

Lymphatic drainage: into the pre- and paratracheal lymph nodes, as well as the lateral deep cervical lymph nodes.

The nerve supply is composed of parasympathetic nerve input from the superior and recurrent laryngeal nerves.[17]

Microscopy:

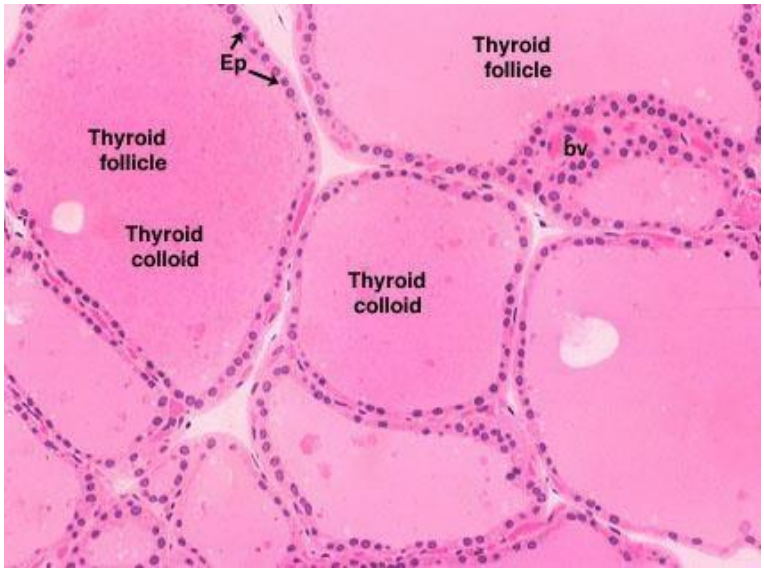


Fig 2- Microscopy of thyroid gland

Each of the numerous follicles of the thyroid gland is bordered by follicular cells, which exude colloid, a protein-rich fluid that acts as a precursor to thyroid hormones. The follicles are rather tiny and the cells are cuboidal or columnar when the gland is active. [18,19] The thyroid follicular cells are polarised, with an apical surface facing the follicular lumen and a basolateral surface facing the bloodstream. Thyroglobulin (Tg) resorption from the follicular lumen takes place if there is an increase in the demand for thyroid hormones, and there is proteolysis within the cell to create thyroid hormones that are eventually released into the bloodstream. [18,20]

The thyroid gland produces hormones.

Follicular cell-derived iodothyronines

Calcitonin is produced by parafollicular cells.

The term "iodothyronines" refers to two hormones.[21,22]

Thyroxine or 3,5,3,5-tetraiodothyronine (T4)

3,5,3'-triiodothyronine (T3)

Each year, dietary iodine as iodides is needed to generate adequate levels of thyroxine in order to prevent iodine insufficiency.

Iodides that have been consumed are absorbed from the digestive tract into the blood and the majority of them are quickly eliminated by the kidneys. However, thyroid gland cells systematically remove 1/5 of ingested iodides from the circulating blood, which is then used to synthesise thyroid hormones. [22]

TRAPPING WITH IODIDE OR PUMPING WITH IODIDE

Iodide from the blood is absorbed by follicular cells of the thyroid gland. Due to the negative charge of follicular cells and the iodide ion, this process—known as "iodide trapping"—occurs against an electrochemical gradient.

Iodide trapping is an active process that necessitates a specific channel called Na+K+ATPase, and this concentration ratio can increase to 250 times when the gland is completely dynamic. Follicular cells have an iodide concentration that is 30 times higher than that of blood.[19,20]

TSH stimulates and hypophysectomy inhibits the thyroid cells' iodide pump, which affects how quickly iodide is trapped. [22]

The overview of thyroid homeostasis can be summarised in the diagram given below:

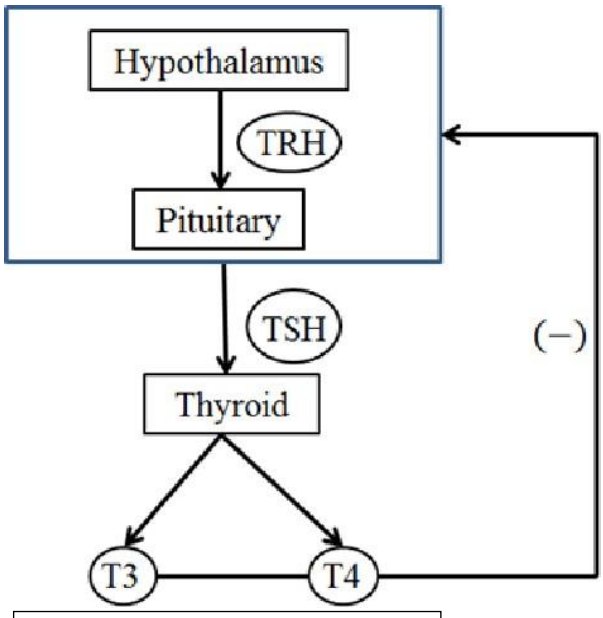


Fig 3- Thyroid homeostasis

The above diagram shows the hypothalamus-pituitary-Thyroid axis with negative and positive feedback mechanisms.

Functions of thyroid hormones:

Effect on Growth

Thyroid hormones are necessary for development and growth. IGF (insulin-like growth factor) and GH are required for T4 and T3 to function (growth hormone). To allow the growth centre to mature, bones to restructure, and skeletal muscles to function appropriately, a foetus must have T4 and T3.[19]

THE IMPACT ON SEXUAL FUNCTION:

A lack of thyroid hormone in men can result in impotence and spermatogenesis problems as well as a loss of desire.

Hypothyroidism frequently results in amenorrhea and abnormal uterine bleeding in females. In addition, they are necessary for good follicular development, ovulation, and pregnancy development.[19,21]

EFFECT ON PARTICULAR BODY MECHANISMS:

Stimulation of carbohydrate metabolism:

Nearly all phases of carbohydrate metabolism, including fast glucose uptake by cells, glucose breakdown, and glucose production, are stimulated by the thyroid hormone. All of these effects are most likely the outcome of the thyroid hormone-induced general increase in cellular metabolic enzymes.[22]

Stimulation of fat metabolism:

The body's internal fat stores are reduced as a result of the thyroid hormone's mobilisation of lipids from fat tissue, which raises plasma levels of free fatty acids and sharply speeds up cellular oxidation of free fatty acids.[22]

Increased basal metabolic rate:

Thyroid hormone stimulates metabolism in the majority of body cells, hence excess amounts of the hormone can raise BMR by 60% to 100% above the range considered normal. BMR decreases to around 1 12 times normal levels when thyroid hormone is not generated.[18]

Effect on sleep:

Hyperthyroid patients feel chronic fatigue as a result of the draining effects of thyroid hormone on the central nervous system- (CNS) and the excitable effects of thyroid hormone on synapses. Hypothyroidism, on the other hand, is characterised by "severe somnolence.[22]

EFFECTS ON

Central nervous system

The multiplication and branching of nerve fibres in the cerebrum, as well as myelination, require T4 and T3. Nerve growth factor must be present for the fibre to branch. If not treated within a few months after life, thyroid insufficiency causes brain damage and cretinism and cannot be reversed by the subsequent injection of thyroid hormones. [19]

Cardiovascular system

The cardiovascular system is impacted by the thyroid hormones in the following ways:

-Increased cardiac output, heart rate, blood flow, and heart force

-Average systolic blood pressure.[23]

Respiratory system :

The hormone keeps the respiratory drive consistent. Thus, hyperthyroidism results in anxiety, tremors, and hyperreflexia while hypothyroidism results in sluggishness.

PREGNANCY THYROID GLAND PHYSIOLOGY

Thyrotropin-releasing hormone- (TRH), which is secreted by the hypothalamus on the maternal side, stimulates the anterior pituitary's thyrotrope cells to produce thyroid-stimulating hormone- (TSH), also referred to as thyrotropin.

A typical pregnancy does not cause an increase in TRH levels. However, TRH does penetrate the placenta and may act as an inducer of TSH secretion by the foetal pituitary.

To satisfy the demands of the mother and foetus, the thyroid gland increases thyroid hormone production by 40 to 100%. [23]

During pregnancy, the thyroid gland has a little expansion brought on by epithelial hyperplasia and increased vascularity. At term, the mean thyroid volume increases to 15 mL from 12 mL in the first trimester. [24]

Enlargement of the Thyroid Glands

The definition of goitre and the research area have an impact on its prevalence. In Aberdeen, 184 pregnant-women had a thyroid enlargement that was both visible and palpable, according to Crooks et al.- (1964), who used a standardised approach to make their findings. This was in contrast to 37% of age- and gender-matched non-pregnant controls.[25]

Parity, mother age, or gestational stage had little effect on the distribution of goitre throughout pregnancy. There was no evidence of pregnancy-related thyroidal enlargement in a comparative study done by Crooks et al. in Iceland, a nation with a high iodine consumption, and goitre was equally common (20 percent) in both the control and pregnant groups. [26] Histologically, the presence of sizable follicles and an excess of colloid is a sign that thyroid hormones are being produced and secreted actively (Burrow, 1975). [27]

Turnbridge and Hall assert that in addition to the possible stimulant of relative iodine deficit, some -of the enlargement may also be caused by increased blood flow, which can occasionally result in a vascular bruit.[28]

Hypervolemia is brought on by pregnancy. Thyroid volume and total body water have a positive correlation in healthy persons. [29] Body weight and BMI increase as water volume increases. Any goitre needs to be evaluated because a healthy pregnancy does not usually result in substantial thyromegaly. [30]

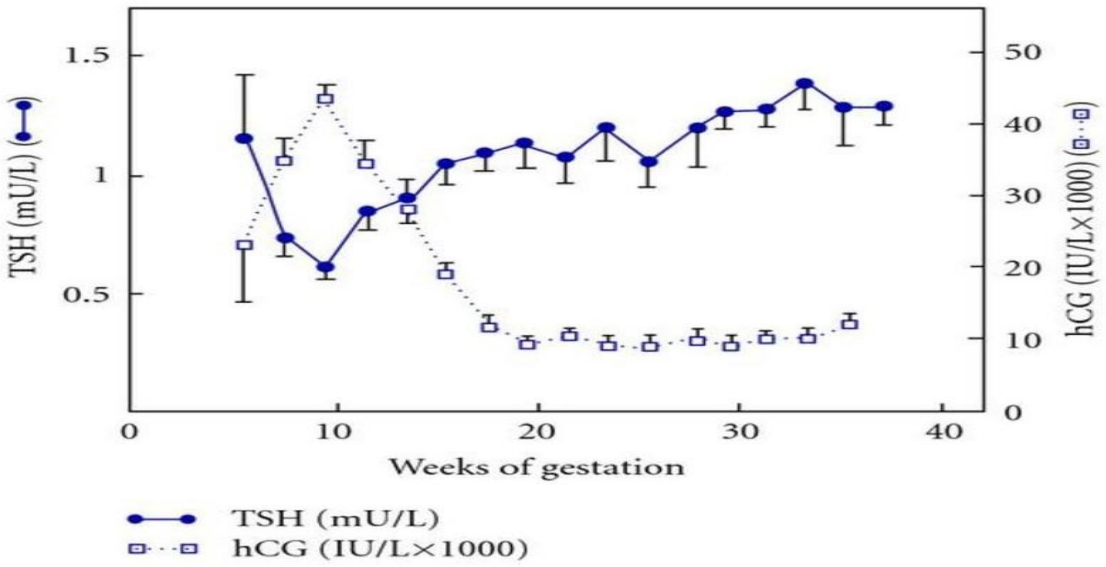
Variations in TSH and its relationship with hCG

Some women with thyroid glands that are otherwise healthy may see a drop in TSH levels during the first trimester. TSH levels in under 10% of females are below average. [31]

Due to the structural closeness of the alpha subunits in both glycoproteins, hCG possesses intrinsic thyrotropic action, which is why high serum hCG levels activate the thyroid. The hCG and serum TSH levels also alter with gestational age. [27]

During the first trimester of pregnancy, HCG levels higher than 50,000 IU/l are linked to a briefly subnormal TSH. [32] TSH levels increased and peaked in the third trimester, peaking 3–4 days after delivery, regardless of the availability of iodine. At HCG levels greater than 400,000 IU/l, TSH is decreased in 100% of women while fT4 is elevated in 80% of them. [34]

In the first and third trimesters, TSH levels in smokers were lower than those in nonsmokers.[35]



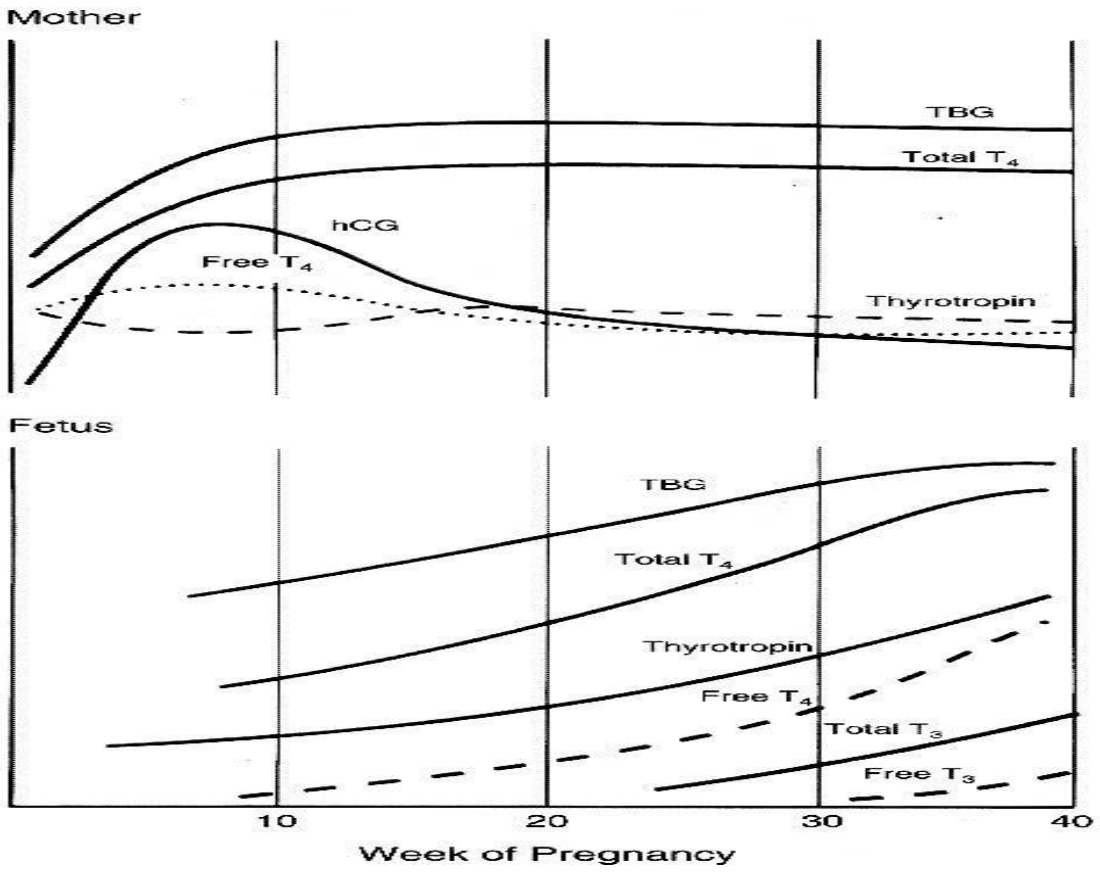
Graph 1- Relationship between TSH and hCG

Variations of T3 and T4 (total and free)

Thyroid-binding globulin (TBG) levels begin to increase early in the first trimester and reach their peak at 20 weeks of gestation. Due to enhanced hepatic synthesis rates brought on by oestrogen stimulation and decreased metabolic rates brought on by increased sialylation and glycosylation of TBG, the concentrations of TBG are higher.

These higher TBG levels raise the concentrations of total serum T3, particularly T4 (which rise sharply between 6 and 9 weeks of gestation and reach a plateau at 18 weeks). However, they have no impact on the serum free T4 and free T3 levels, which are crucial in physiology. In the second half of pregnancy, fT4 levels drop and, less typically, fT3 levels do as well.

Even if significantly higher TBG concentration does not cause significantly lower fT4, its higher binding affinity does.[30]



Graph 2- Relative changes in maternal and fetal thyroid function across

Alterations in Iodine Handling

An increase in glomerular filtration rate causes a surge in renal iodine clearance during pregnancy and for up to 6 weeks following birth. The drop in plasma inorganic iodine content is caused by a number of reasons, including hemodilution, an increased iodine distribution volume, and maternal losses to the foetus. Iodine is cleared from the thyroid more frequently as a result. Production of the thyroid hormone in the foetus increases in the second half of pregnancy. Following birth, iodide is also transmitted to breast milk, but total iodine intake is unaffected. [36]

According to the clinical practise recommendations of the Endocrine Society, iodine consumption before pregnancy should be 150 g/day to maintain adequate iodine stores of thyroid. A daily intake of 250 g of iodine is recommended throughout pregnancy and lactation. Iodine shortages do not affect women living in countries with sufficient and ongoing programmes to iodize all salt.[37]

Summary of thyroid hormone physiology in pregnancy.[38]

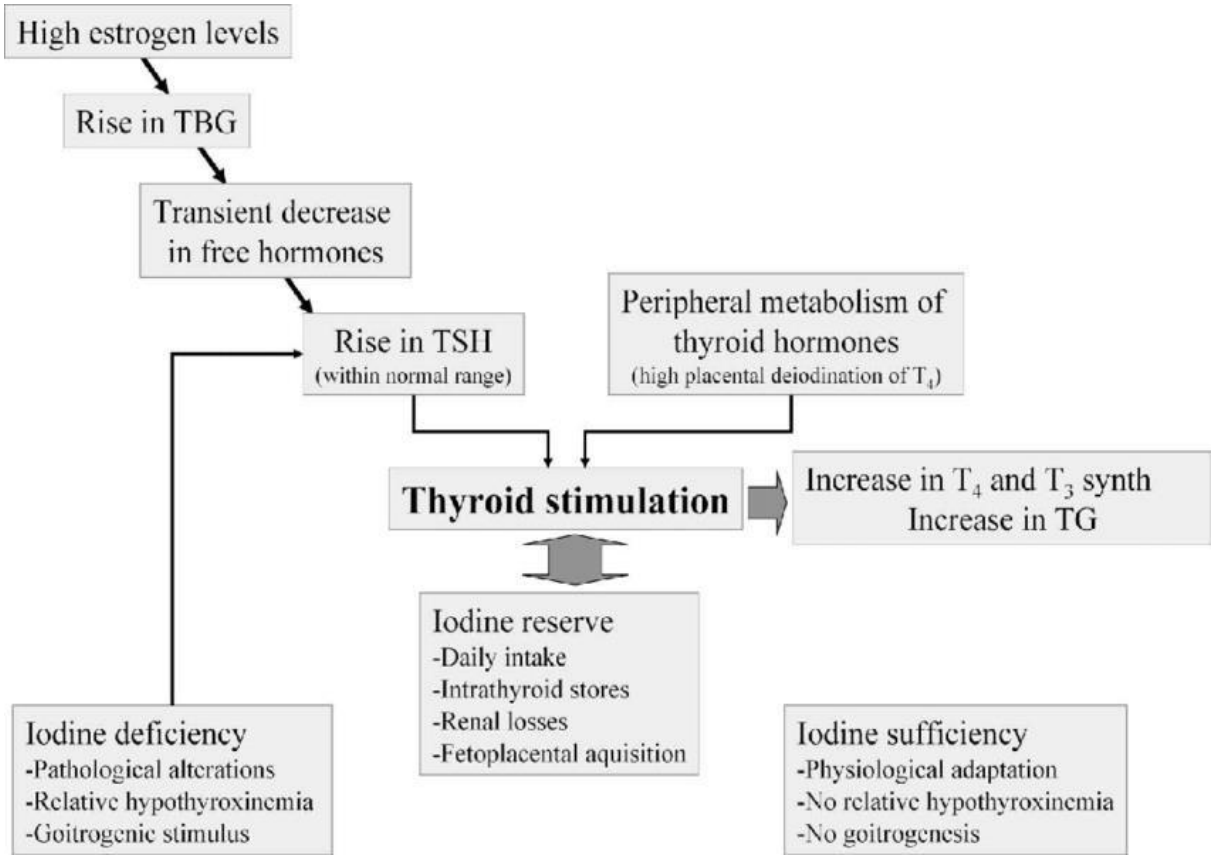


Fig 4- thyroid hormones physiology in pregnancy

Physiologic changes that influence thyroid function in pregnancy

Physiologic Change	Effect on Thyroid Function Test Results	Impact on Interpretation of Thyroid Function Tests
↑ Thyroxine-binding globulin	↑ Serum total T3 and T4 concentrations	Total thyroid hormone levels may be misleading; need to rely on free thyroid hormone levels.
↑ Human chorionic gonadotrophin secretion	↑ Free T4 and ↓ TSH	High human chorionic gonadotrophin levels may result in gestational thyrotoxicosis. This usually only requires symptomatic treatment but needs to be distinguished from pathologic thyroid disease. Response possibly impaired in TPO antibody–positive women.
↑ Iodine excretion	↓ Thyroid hormone production in iodine-deficient areas	Need to be mindful of iodine deficiency and ensure optimal intake ideally before conception.
↑ Plasma volume	↑ T3 and T4 pool size	
Increased type 3 5-deiodinase (inner ring deiodination) activity from the placental	↑ T3 and T4 degradation	May explain in part the increasing thyroid demand in pregnancy.
Thyroid enlargement (in some women)	Increased thyroglobulin	Small goiters is common in pregnancy, but may be a sign of low thyroid function so merits thyroid function testing.

Table 1- Physiological changes that influence thyroid function in pregnancy

Causes of hypothyroidism

Primary

- Hashimoto's thyroiditis and atrophic thyroiditis are examples of autoimmune hypothyroidism.
- Iatrogenic conditions include ^{131}I treatment, partial or complete thyroidectomy, and external neck radiation for cancer or lymphoma.
- Iodine overload (including amiodarone and iodine-containing contrast media), lithium, anti-thyroid medications, p-aminosalicylic acid, interferon and other cytokines, aminoglutethimide, and sunitinib are among the pharmaceuticals.
- congenital hypothyroidism: SH-R mutation, missing or ectopic thyroid gland
- Iodine shortage
- Amyloid disease, sarcoidosis, hemochromatosis, scleroderma, cystinosis, and Riedel's thyroiditis are examples of infiltrative illnesses.
- Type 3 deiodinase overexpression in infantile hemangiomas

Transient

- Postpartum thyroiditis is a type of silent thyroiditis.
- chronic thyroiditis
- withdrawal of thyroxine therapy in those with a healthy thyroid
- Following 131I therapy or partial thyroid gland resection for Graves' disease,

Secondary

- Tumors, pituitary radiation or surgery, infiltrative illnesses, Sheehan's syndrome, trauma, and inherit forms of combined pituitary hormone deficits can all cause hypopituitarism.
- isolated TSH inactivity or deficit
- Treatment for bexarotene
- Tumors, trauma, infiltrative illnesses, and idiopathic hypothalamic disease

signs and symptoms of hypothyroidism, [39]

symptoms	signs
• Tiredness and weakness • Dry skin • Coldness • Loss of hair • Difficulty concentrating and poor memory • Difficult to pass stools • Weight gain with poor appetite • Shortness of breath • Voice alteration • Heavy menstrual bleeding (later, infrequent menses or loss of menses) • 'Pins and needles' sensation • Hearing impairment	• Having rough, dry skin and cold outer extremities • Puffy hands, feet, and face • Hair loss that is wide spread • Decrease in heart rate • Leg swelling • delayed relaxation of the tendon reflex • over use strain injury • effusions of serous cavities

Table 2- Signs and symptoms of hypothyroidism

Types of hypothyroidism

Hypothyroidism is a clinical condition characterised by decreased production of thyroid hormones.

Primary hypothyroidism: decreased thyroid hormone production due to intrinsic pathology in the thyroid gland.[40]

Secondary hypothyroidism: caused by pituitary gland dysfunction**.** [40]

Tertiary hypothyroidism: because of dysfunction in the hypothalamus. [40]

Thyroid hormone resistance hypothyroidism is most commonly caused by a mutation in the gene encoding thyroid hormone receptor B (TRB gene mutation)..[40]

Subclinical hypothyroidism is defined as usual FT4 production with elevated serum TSH values. [40]

Overt hypothyroidism is characterised by low serum T4 and elevated serum TSH. [38, 40]

Isolated hypothyroxinemia during pregnancy: low FT4 below the 2.5th percentile with normal TSH [41]

Evaluation of hypothyroidism, [42]

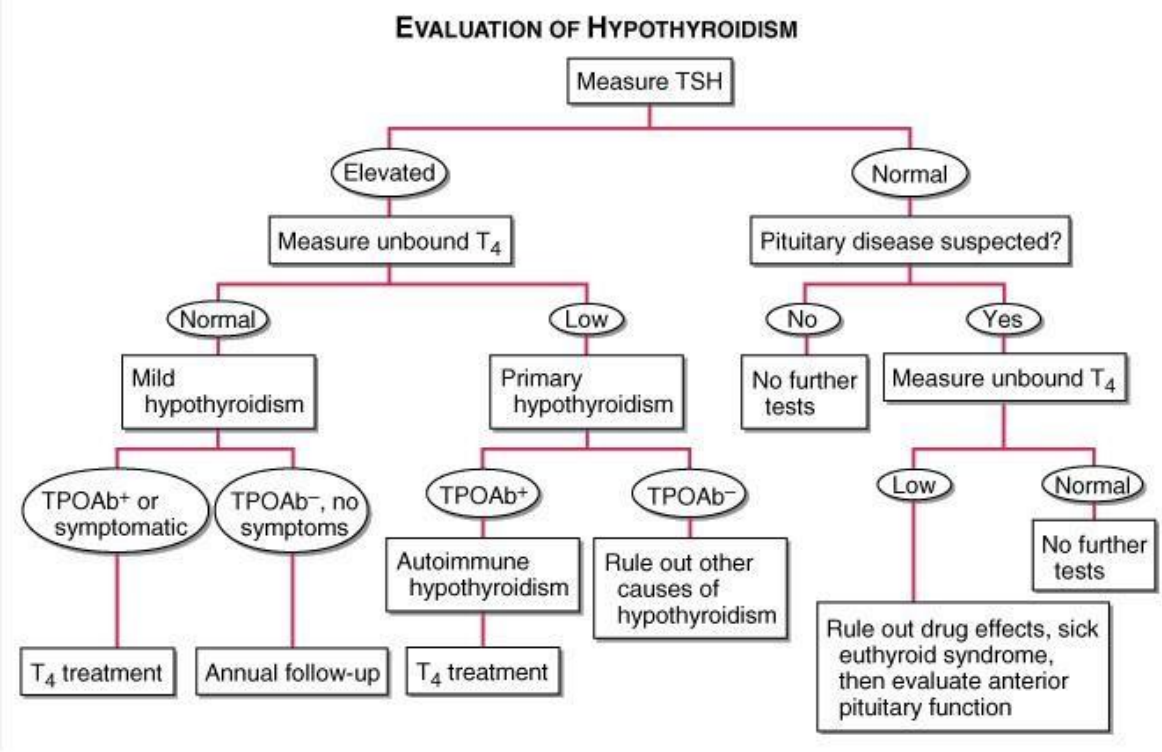


Fig 5- evaluation of hypothyroidism

VARIOUS TYPES OF HYPOTHYROIDISM'S EFFECTS ON OBSTETRIC OUTCOMES

Effects of overt hypothyroidism

Overt or symptomatic hypothyroidism complicates between 0.2 and 1.2 % of pregnancies.[43] Overt hypothyroidism, which is newly detected, occurs in approximately0.2%–0.66% of pregnant women. .[44, 45]

Adverse obstetric outcomes with overt hypothyroidism include fetal loss, premature delivery, low birth weight, and pre-eclampsia.[46]

- In a study done in 1993, Leung AS et al. found that overt hypothyroidism is linked to a higher incidence of problems such pre-eclampsia and low birth weight infants.[47]
- Reid SM et al(2010) .'s study determined the necessity of intervention in the management of maternal hypothyroidism and discovered that levothyroxine treatment lowers the risk of pre-eclampsia in pregnant women who are overtly hypothyroid, suggesting that it has a positive impact on the treatment of hypothyroidism. However, it made no mention of how hypothyroidism affected the newborn. [48]

Effects of subclinical hypothyroidism

TSH levels that are raised yet thyroxine (T4)levels in the free serum are normal are known as subclinical hypothyroidism (SCH).[40]

According to numerous research [49–60], there is a link between SCH and a higher risk of unfavourable pregnancy and neonatal outcomes. including

- preterm deliveries (13.5%)
- gestational hypertension- (11%)
- pre-eclampsia (6%)
- Abruptio placenta (4%)
- Cesarean delivery (27%)
- low birth weight (8.5%)
- low Apgar score (0.7%)
- Neonatal death (0.5%)

According to Kattah et al., there is a link between subclinical hypothyroidism and pregnant hypertension since patients with subclinical hypothyroidism who were identified with gestational hypertension and treated with levothyroxine medication had normalised blood pressure measurements.[61]

Out of 100 patients in an observational study by Sreelatha et al.[62], 96 had subclinical hypothyroidism. Thyroid deficiency in pregnancy is associated with

- miscarriages (2.1%)

- Anemia (4.20%)
- Pregnancy-induced hypertension (14.7%)
- Gestational Diabetes Mellitus (4.2%)
- Preterm labours (3.1%)
- oligohydramnios (16.67%)
- Cesarean deliveries (22.9%)
- 6.3% had postpartum hemorrhage.

Contrarily, these two studies [58, 63] demonstrate no discernible advantage in reducing the risk of overall unfavourable pregnancy outcomes or hypertensive disorders of pregnancy, supporting the argument against routine subclinical hypothyroidism treatment.

Thyroid auto-immune diseases in pregnancy :

Hashimoto's thyroiditis :

Hashimoto's thyroiditis is one of the most common autoimmune illnesses in general; in women of reproductive age, the incidence of anti-thyroid antibodies is 10-15%, and it is considerably rising. [64]

The aetiology of autoantibodies depends on the cell-mediated immune response; throughout pregnancy, anti-TPO antibodies gradually decrease and reach their lowest levels in the third trimester.[65]

A increased incidence of placental abruption, gestational HTN, PPH, miscarriages, as well as foetal problems, has been linked to overt or subclinical hypothyroidism.[66]

Postpartum Thyroiditis :

The incidence of this condition ranges from 1.1 to 21.1 percent; it is described as thyroid gland dysfunction in the first year following birth, which can present as hypo- or hyperthyroidism.[66] Those with Type 11 DM are affected 3 times more often and 6 times more frequently than women with increased TPOABb.[63, 67]

At six and twelve months following delivery, thyroid function tests are advised for these women.

Early on in the course of the illness, the hyperthyroid phase of the disease will manifest and endure for just 1-2 months. Later, the thyroid tissue is destroyed, resulting in the phase of hypothyroidism, which is more prevalent in TPOAb-positive patients. It could be temporary, with thyroid function returning in 12 months, or it could be permanent in 30% to 50% of patients);[68] Additionally, it was found that people who experience temporary hypothyroidism have a 20–60% likelihood of eventually acquiring permanent hypothyroidism. [67]

Effects of autoimmune hypothyroidism

Autoantibodies against almost 200 thyrocyte components are thought to be the primary cause of the majority of thyroid issues. These antibodies can cause thyroid inflammation, which may cause the death of follicular cells, or they can promote or inhibit thyroid activity.

The TSH receptor is bound and activated by thyroid-stimulating autoantibodies, also known as thyroid-stimulating immunoglobulins, which leads to thyroid hyperfunction and growth. Even though they are most frequently linked to Graves disease, this effect might be mitigated by concurrent generation of thyroid-stimulating blocking antibodies.[69]

Through the activity of the enzyme thyroid peroxidase, the thyroid gland usually creates thyroid hormones (TPO).

5–15 percent of all gravidas have thyroid peroxidase antibodies, which are anti-TPO.[56,70]

Human chronic gonadotropin (hCG) and human chronic thyrotropin (hCT), in particular, may interact with anti-thyroid antibodies or be an indication of immune system alterations in the mother.[71]

Anti-thyroid antibodies cause euthyroid non-pregnant women to repeatedly miscarry throughout their subsequent pregnancies.[72,73]

- According to Stagnaro-Green et al study .'s of 552 women who had thyroid antibody screening, the positive antibody group saw a rate of abortion of 17% compared to the negative antibody group's 8.4%.[72]

- According to the study by Mecacci F et al,[74] the presence of TPO antibodies has an incidence of a three-fold increase in the risk of recurrent abortions and a four-fold increase in the risk of foetal death and pre-eclampsia syndrome, thus drawing a positive correlation between TPO antibody presence and adverse obstetrical outcomes.
- Another study, conducted by Abbassi-Ghanavati M et al.[75] enrolled 1000 women with positive TPO and found a link between TPO antibody presence and placental abruption.
- According to Anderson and Jameson's two studies [69,76], patients with TPO antibodies have a higher risk of postpartum thyroiditis and a lifelong risk of permanent thyroid failure.
- TPO-Ab was positively linked with subclinical hypothyroidism (SCH) with hypertension but not with SCH without hypertension in the study by Shimizu Y et al. [77]
- According to Matsua et al., women whose pregnancies terminated in miscarriages had significantly lower free T3 and T4 readings.[78]
- 22 non-pregnant women with a problematic obstetric history underwent thyroid antibody screening by Bussen Steck et al. in 1996. They discovered that 36 percent of the population had thyroid antibodies, compared to controls who were multiparous (9%) and nulliparous (5%), respectively. [79]

Relation of Maternal and Foetal thyroid hormonal status

Because the placenta is present and controls the transport of several chemicals, including T4, to the foetus, system of the hypothalamus, pituitary, and thyroid in the foetus develops rather independently of maternal influence under typical circumstances. The stage of foetal maturation is mostly reflected by circulating thyroid hormone levels. Up to week 10 of pregnancy, there are trace amounts of thyroid hormone receptors in the developing fetus's brain. Through week 16 of pregnancy, the concentrations of thyroid hormone receptors rapidly increase by a factor of 10. [80]

At 12–14 weeks of development, total and free T4 levels in foetal serum are detected at low levels. [81,82,83] The mean foetal serum total T4 is two mcg/dL (26 nmol/L) at 12 weeks, and a

significantly more substantial fraction is in the free form, according to results obtained by foetal cord sample in typical pregnant women. By 36 weeks, the foetal incremental T4 concentration has normally increased to levels that are comparable to those of non-pregnant females (10 mcg/dL or138 nmol/L). This increase in serum TBG concentration and total T4 levels are principally related to the stimulation of the foetal liver by maternal oestrogen. Additionally, the concentration of foetal free T4 has increased as a result of the TSH receptor being upregulated. [84]

Contrary to T4, despite an increase in the amounts of T3's inactive metabolites reverse T3 (rT3) and T3 sulphate, the blood level of T3's active metabolite is consistently lower during foetal life than it is after delivery. At 12 weeks, the foetal blood T3 level is 6 ng/dL (0.09 nmol/L), and at 36 weeks, it is 45 ng/dL (0.68 nmol/L). [85]

It highlights how crucial local T4 to T3 conversion is for brain health. Type 2 deiodinase, which converts T4 to T3, is expressed more often in the foetal cerebral cortex throughout the second trimester at the same time as T3 concentrations. One further possible T3 source for the pituitary is T3 sulphate.[86] When a baby is full-term, the blood level of TSH climbs steadily from 4 mU/L at 12 weeks to 8 mU/L, and is frequently higher than the corresponding mother levels. [82,87] The specific cause is unknown, however it may be related to the fetus's high levels of TRH and the hypothalamic-pituitary-thyroid axis's immature development.

Role of placental transfer

During the early part of pregnancy, before the foetus' thyroid has fully developed, T4 can be found in the foetus' brain, proving that there are mechanisms in place for a modest but important transfer of maternal T4 to the foetus' circulation. [85, 88]

Transmission of the mother's thyroid hormone is essential when the foetus is hypothyroid. When neonates with severe congenital hypothyroidism received prompt treatment after delivery, the cognitive outcomes were predicted or almost normal. Even in neonates born without thyroid peroxidase due to a congenital condition, the cord serum T4 content is, for example, between 25 and 50% of normal. [89] This maternal T4 swiftly exits the newborn circulation with a half-life of 3 to 4 days.

Congenital hypothyroidism and the importance of screening

One of the most treatable causes of intellectual disability is congenital hypothyroidism, which is why new born are routinely screened for the disease.[90]

A third or so of the world's population lives in developing nations, where screening programmes are also being implemented. [90] To avoid the misleading increase brought on by the physiologic spike in neonatal TSH, which takes place soon after birth, screening should be done between two and five days after birth. When samples show a value below a predetermined cut-off, several programmes use primary T4 screening with TSH testing. Others combine a reflex T4 method with a preliminary TSH measurement. Since congenital hypothyroidism screening virtually eliminated intellectual disability, postnatal levothyroxine therapy is started right away. [91,92]

The maternal thyroxine is passed to the foetus throughout pregnancy.[93]

Importance of thyroid hormones on foetal growth

For healthy foetal brain development, particularly prior to the commencement of foetal thyroid gland function, maternal thyroxine is crucial. [94,95]

The maternal thyroxine contribution is still significant even if the foetal gland starts concentrating iodine and synthesising thyroid hormone after 12 weeks of gestation.

Thirty percent of the thyroxine in the term foetal serum comes from maternal sources. [96] Even Nevertheless, little is known about the developmental hazards linked to maternal hypothyroidism after mid-pregnancy. [97]

Cortical grey matter volume in children is inversely correlated with maternal thyroid function during the first trimester.[98]

Effects on the foetus

Some of the impacts on the foetus are

1. Fetal growth restriction
2. Low birth weight

3. Intrauterine deaths
4. Low APGAR scores
5. Fetal distress

- Untreated hypothyroid women are much more likely to develop pre-eclampsia, and insufficient therapy leads to LBW kids, according to the ACOG practise bulletin from 2001. [99]
- N. Ohara et al. (2004) conducted a literature review on the role of thyroid hormone in trophoblastic function and neuronal development. They concluded that "Scrutiny of maternal thyroid hormones to ensure adequate hormone levels in early pregnancy is of prime importance in preventing miscarriage and neurodevelopmental deficits in infants." [100]
- Using comparisons with the general population, Leung AS, Miller LK, et al. (1993) investigated maternal hypothyroidism's effects on pregnancy. When compared to the general population, they discovered that women who were sub clinically and obviously hypothyroid had a greater incidence of pregnancy-induced hypertension. The implications of untreated or improperly managed hypothyroidism during pregnancy were discussed. Gestational hypertension occurs in the majority of hypothyroid patients who are still hypothyroid after birth. Additionally, they discovered a higher prevalence of low birth weight in children born to hypothyroid moms, and they came to the conclusion that this was likely caused by the high rates of premature delivery in these mothers. [47]
- In a retrospective study of 167 pregnant women, Idris, Srinivasan R, Simm A, Page RC, et al. (2005) found a correlation between the outcomes and TSH levels in the first and third trimesters. When compared to non-hypothyroid individuals, effects like the caesarean section rate were higher in hypothyroid mothers (287 percent) (18 percent). A risk factor for low birth weight is hypothyroidism, as shown by the prevalence of low birth weight in moms with TSH > 5.5 and 5.5, respectively, being 15% and 4.8%. Low birth weight was less common in moms whose TSH was greater than 2 and who had their TSH under control in the third trimester.[101]
- The prevalence of thyroid dysfunction during pregnancy was researched by Sahu MT et al. in 2009. They found that compared to controls, overtly hypothyroid women had an increased risk of pregnancy-induced hypertension (P = 0.04), intrauterine growth restriction (IUGR), and intrauterine demise (P = 0.0004). In addition, caesarean

sections were more frequently performed on hypothyroid moms, most likely because these patients had a higher frequency of foetal distress. Pregnant women with subclinical hypothyroidism had a significantly increased caesarean section rate for foetal distress (P = 0.04). Additionally, the overt hyperthyroidism group had significantly higher rates of both gestational diabetes and newborn problems (P = 0.03 and 0.04, respectively).[102]

- When Hareesh MV et al. (2015) looked at the impact of maternal hypothyroidism on the foetus, they found that babies delivered to hypothyroid moms had a higher prevalence of NICU admissions. Even though they looked at how hypothyroidism affected foetal birth weight, they were unable to find a positive association, perhaps as a result of the smaller sample size. In the same study, it was discovered that there were more maternal difficulties, such as preterm labour and a higher chance that the mother would need a caesarean section. Whether the mother has subclinical or overt hypothyroidism, they discovered that these issues are frequent.[103]
- Out of 100 individuals, 96 had subclinical hypothyroidism, according to an observational study by Sreelatha et al. (2017). These patients also reported foetal adverse outcomes, such as low birth weight (21.9%), hyperbilirubinemia (9.4%), and NICU admissions (14.7%). [62]
- L-T4 supplementation is advised to improve pregnancy outcomes since this study found that pregnant women with hypothyroidism and hypothyroxinemia are more likely to deliver children who are LGA (big for gestational age). Hypothyroid women often have a higher risk of preterm birth and low birth weight in their offspring. where the risk of SGA does not rise as gestational age is added. [104]

Screening.[105]

Risk factors that should prompt a pregnant thyroid disease screening in accordance with American Thyroid Association recommendations

- Women who have had thyroid problems in the past or had thyroid surgery, as well as those with a family history of thyroid issues such goitres, ought to be examined.
- Thyroid antibodies and symptoms or clinical indications of hypothyroidism are present in women.

- Women with type I diabetes who have a history of miscarriage or early delivery, as well as other autoimmune conditions such vitiligo, adrenal insufficiency, and hypoparathyroidism that are usually connected to autoimmune thyroid dysfunction,
- In females who have undergone therapeutic head or neck radiation in the past,
- The prevalence of hypothyroidism rises with age in females with a body mass index (BMI) of 40 kg/m2 and an age of 30years or older.
- Women on amiodarone and lithium, as well as those who recently (within the last six weeks) came into contact with iodinated radiological contrast agents.

Management of hypothyroidism in pregnancy

Levothyroxine taken orally is the suggested treatment for hypothyroidism in pregnant women. Other thyroid supplements, such desiccated thyroid or triiodothyronine (T3), shouldn't be taken while pregnant.[106]

Serial hCG and TSH administration to women with known hypothyroidism is ineffective in promoting thyroxine production at the proper amount. Due to an increase in demand during pregnancy, an incorrect adjustment in exogenous levothyroxine therapy will result in maternal hypothyroidism. According to clinical research, the need for thyroxine (or exogenous levothyroxine) increases as early as the first four to six weeks of pregnancy. [107]

These requirements steadily increase between weeks 16 and 20 of pregnancy before plateauing till delivery. The timing of TSH follow-up intervals for patients who have received treatment as well as recommendations for LT4 dosage modifications for pregnant women who are affected are based on these findings.

Half of TPOAB-positive pregnant women experience postpartum thyroiditis, and 1/3 to 1/2 of these women experience persistent hypothyroidism within the first year after giving birth. [68] The thyroid function of pregnant TPOAb-positive women must therefore be monitored both during and after the pregnancy. Between three and twelve months after delivery, the postpartum thyroiditis hypothyroid phase sets in. TSH and FT4 levels should be checked on women with TPOAB every three months for postpartum thyroiditis. If TSH levels are normal at delivery, they should be checked again between 6 and 9 months afterwards. [108]

Follow-up.[107]

Women who have subclinical and overt hypothyroidism or who are at risk for it (euthyroid patients with the presence of TPO or TGAB or treated with radioactive iodine) should have their serum TSH levels routinely 'checked every four weeks until mid-gestation' and at least once close to 30 weeks of pregnancy.

MATERIALS AND METHODS

1. Source of data

- Shri B.M. Patil's Medical College, Hospital, and Research Centre, Vijayapura. Patients are seen in the labour ward of the Department of Obstetrics and Gynecology in BLDE (deemed to be a university).
- Patients will get complete information about the trial, and formal informed consent will be obtained.
- After receiving ethical clearance, the period of contemplation would last from January 2021 until April 2022.

2. INCLUSION CRITERIA

- Pregnant women with a known case of hypothyroidism
- Women who Develop Hypothyroidism During Pregnancy
- All pregnant women beyond the 28-week period of gestation get admitted to the labour ward.

3. EXCLUSION CRITERIA:

- Patients have undergone radioiodine therapy.
- Patients have undergone a partial thyroidectomy.
- Multifetal gestation

4. **SAMPLE SIZE**:

The study will involve all expectant mothers who are past the 28-week mark in gestation.

The study would need a sample size of 301[5] if it were assumed that 13% of the population's subjects have the factor of interest.

for calculating the predicted proportion with an accuracy of 5% absolute and a confidence level of 98%.

N = Z2p*q/d2 was the formula used.

Where does the z=z statistic fall within the significance threshold?

d2 is the absolute error.

P is the proportional rate.

q= 100-p

Methodology (Study Design):

- If they meet the inclusion and exclusion criteria, pregnant women who are over 28 weeks POG and present to the labour room are recruited for the study after giving their informed consent.
- The following patient conditions were looked into after a pertinent history and examination:
- There will be a TSH analysis on blood samples.
- TSH levels were evaluated using the CLIA (CHEMILUMINESCENCE IMMUNOASSAY) method.
- Further testing for fT4 and anti-TPO antibodies will be done in patients with abnormal TSH levels.
- CLIA performed the fT4

- created by ELFA was an anti-TPO antibody (enzyme-linked fluorescent assay)
- Patients will be evaluated for hypothyroidism following the investigations.

and the study's reference range will be based on ATA 2011 recommendations. When trimester-specific policies are unavailable, the ATA states that the following reference ranges will be applied: [105]

- First trimester: 0.1–2.5 microIU/liter
- Second trimester: 0.2–3.0 microIU/liter
- Third trimester: 0.3–3 microIU/liter
- TPO antibody levels and free T4 levels are assessed if TSH levels are high; the reference range is as follows:
- 0.7–2.5 ng/dl of free t4.[109]
- Antibodies to TPO: 0.5 IU/ml [110]
- TSH levels are determined in infants by heel-prick blood collection.

TSH is routinely measured between 2 and 5 days of age, but it is also checked in preterm and critically ill term babies at 1 hour of age.The reference range for TSH in newborns is: [111]

- Premature infants (28-36 weeks): 1st week of life: 0.7-27 mIU/l
- TERM INFANTS: 1-17.6 Miu/L FROM BIRTH TO 4 DAYS

- The maternal outcomes are in terms of the following:
    - Anemia: Hb <11g/dL
    - Hypertensive disorders in pregnancy
    - Abruptio placenta,
    - Postpartum hemorrhage,
    - Preterm deliveries: 37 completed weeks
    - incidence of caesarean section
    - Gestational diabetes mellitus
    - Oligohydramnios <5

- The perinatal outcome in terms of

- Fetal growth restriction: a baby weighing less than 90% of other babies at the same gestational age
- intrauterine death
- LBW: <2.5kg
    - Low APGAR score: If the score at 1 minute is < 7
    - Other neonatal outcomes noted:

    - Neonatal hyperbilirubinemia:

Neonatal hyperbilirubinemia will be considered pathological if: [112, 113]

1. If jaundice manifests itself within the first 24 hours of life,
2. Total serum bilirubin (TSB) level >5 on the first day of life
3. >10 TSB on the second day of life
4. >15 TSB on the third day of life

The method used to measure bilirubin levels is the DIAZO method.

- Sepsis
- Early neonatal death

5. STATISTICAL ANALYSIS:

The acquired data will be placed into an Excel spreadsheet, where statistical analysis for the social sciences will be carried out (version 20).

A mean (or median) SD, counts and percentages, and graphs will be used to display the results.

An independent t-test will be used to compare regularly distributed continuous variables between two groups; Mann-Whitney u tests will be used for variables that are not normally distributed.

The chi-square test will be used to compare categorical variables.

We will define statistical significance as P 0.5. Every statistical test will have two possible outcomes.

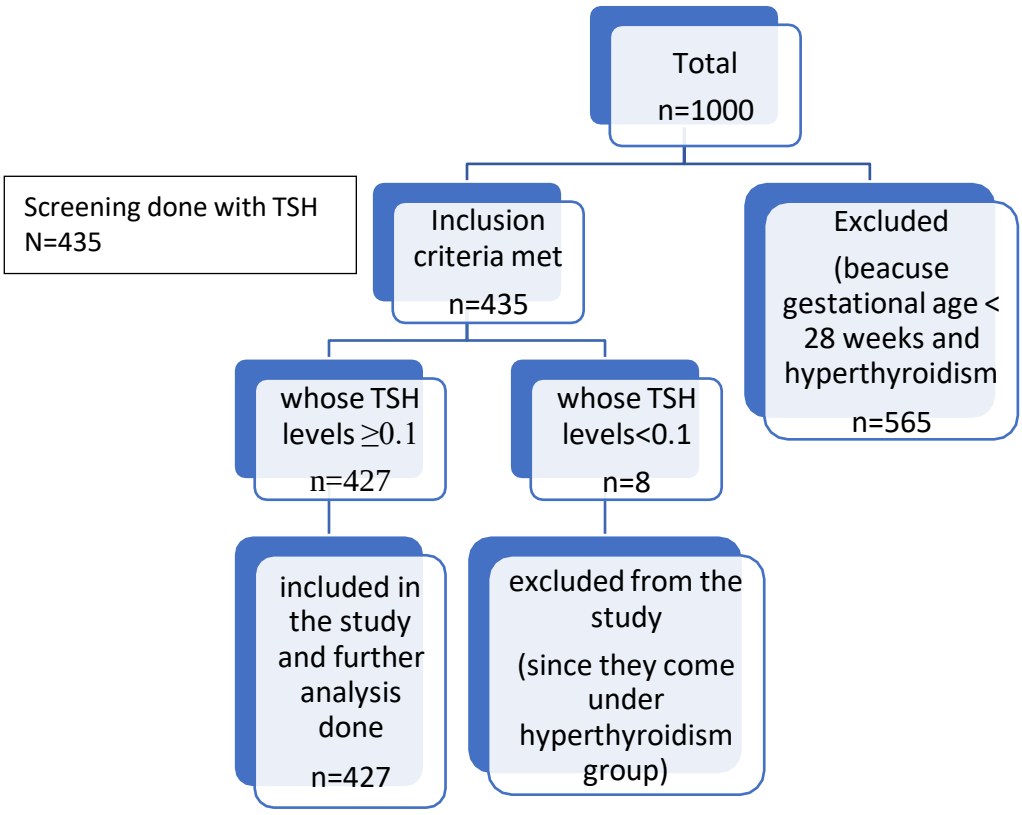
In this study, routine, standardised methods must be investigated or implemented. This research does not involve any animal testing.

INVESTIGATIONS:

In the mother, in the child

1. TSH
2. fT4 BILIRUBIN
3. Anti-TPO antibody
4. CBC

Fig 6- Analysis flow chart

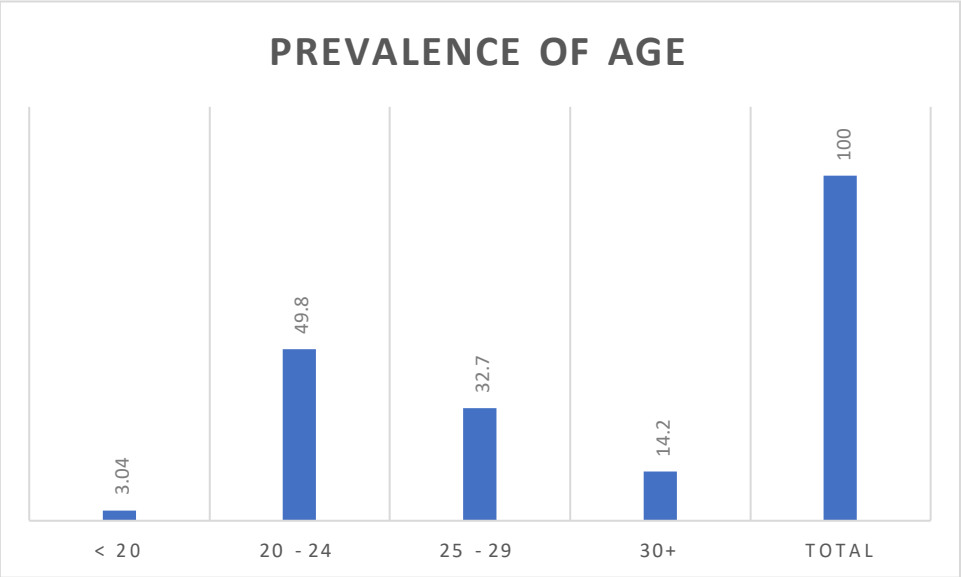


RESULTS AND OBSERVATIONS

Table 3: Age(Years)

The age range seen in the study is explained by the table and graph below. The majority of expectant mothers are between the ages of 20 and 24 years (49.8 %)

Age(Years)	No. of patients	Percentage
< 20	13	3.04
20 - 24	213	49.8
25 - 29	140	32.7
30+	61	14.2
Total	427	100



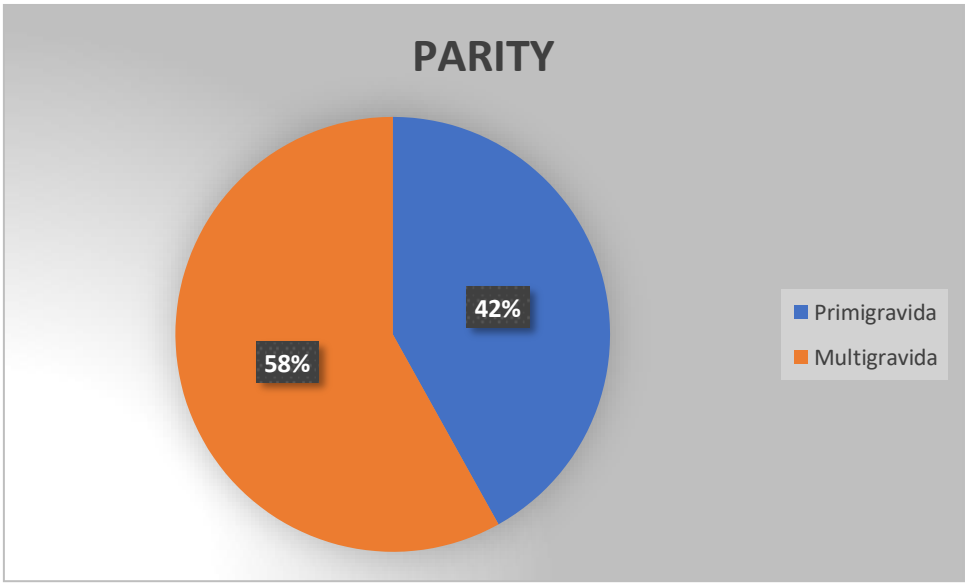
Graph 3

Table 4: O**bstetric score**

The prevalence of singleton and multiple pregnancies is explained in the table and graph below.

There are more multigravida (58.07%), with gravida 2 being the most common.

Obstetric score	No. of patients	Percentage
Primigravida	179	41.9
Multigravida	248	58.07
Total	427	100



Graph 4

The prevalence of various hypothyroidisms is explained in the table and graph below.

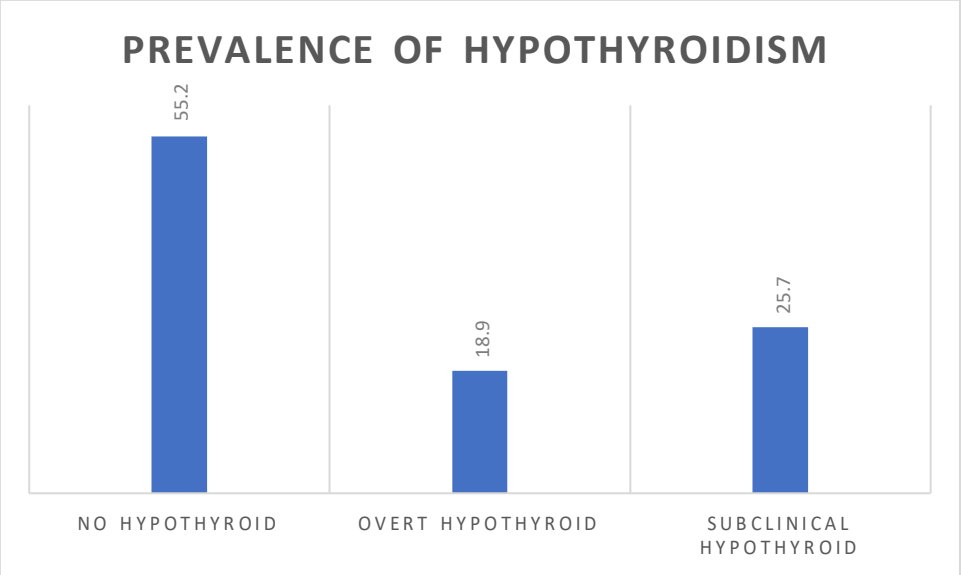
In our study, subclinical hypothyroidism was most frequently observed (25.7 percent)

With the 191 cases of hypothyroidism, 54 cases (or 59.3 percent) are already receiving therapy (pre-existing cases), and 137 cases (or 71.7 percent) are newly diagnosed cases.

TABLE 5- Prevalence of hypothyroidism

TYPES	**NUMBER OF PATIENTS**	**PERCENTAGE**
NO HYPOTHYROID	236	55.2
OVERT HYPOTHYROID	81	18.9
SUBCLINICAL HYPOTHYROID	110	25.7
TOTAL	427	100.0

Graph 5



EFFECT OF MATERNAL HYPOTHYROIDISM ON OBSTETRICAL OUTCOMES

The impact of maternal hypothyroidism on pregnancy-related hypertension illnesses is described in the table and graph below.

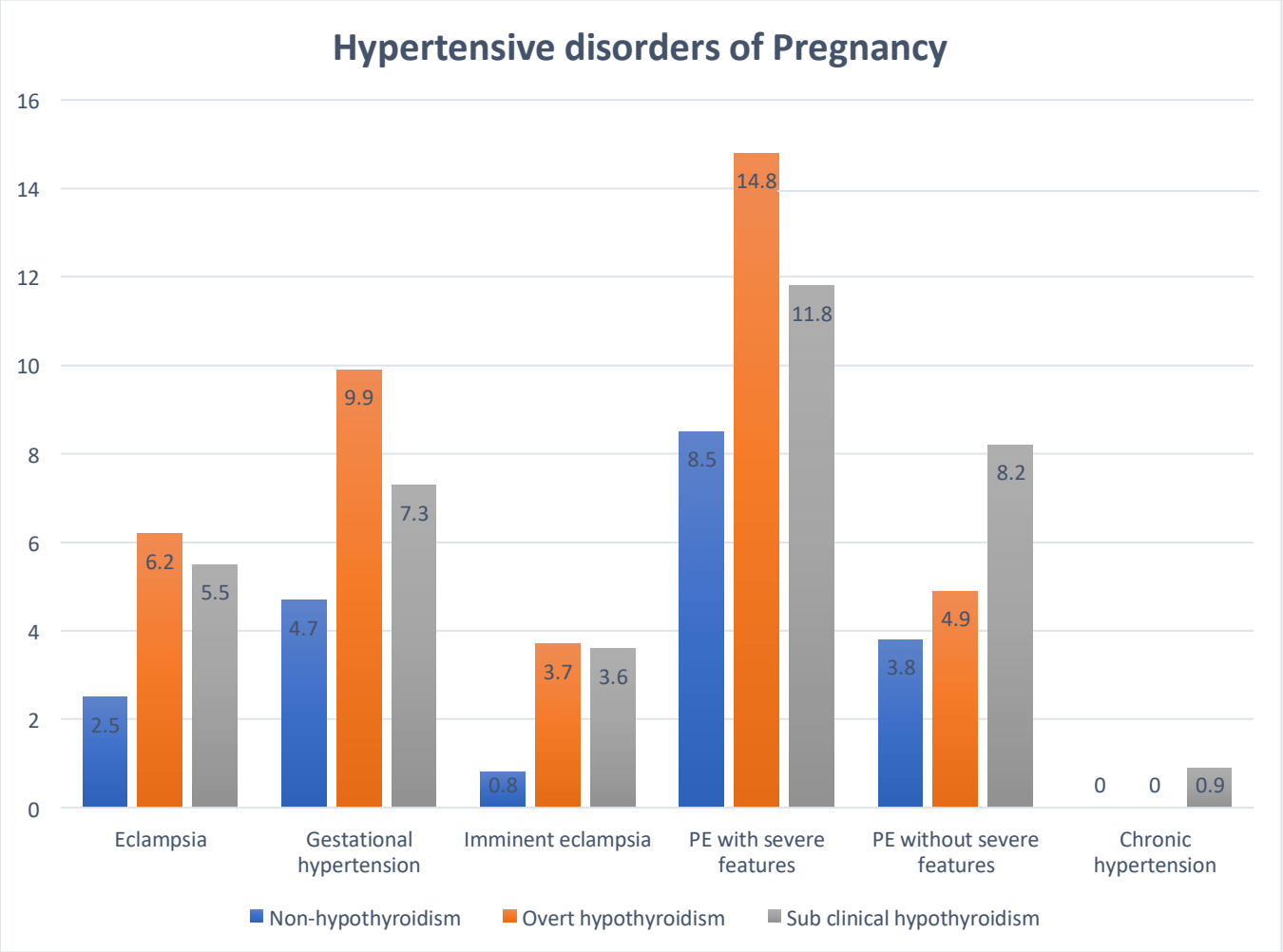
Both subclinical and overt hypothyroidism have positive association with hypertensive disorders of pregnancy and found to be statistically significant (p value <0.05)

Patients with hypothyroidism are most likely to experience PE with severe symptoms (26.6 percent)

TABLE 6- EFFECT ON HYPERTENSIVE DISORDERS OF PREGNANCY

HYPERTENSIVE DISORDERS	**TYPES OF HYPOTHYROIDISM**						Chi-square test	P value
	No Hypothyroid		Overt Hypothyroid		Subclinical			
	N	%	N	%	N	%		
Eclampsia	6	2.5	5	6.2	6	5.5	31.923	0.0014
Gestational hypertension	11	4.7	8	9.9	8	7.3		
Imminent eclampsia	2	.8	3	3.7	4	3.6		
None	188	79.7	37	45.7	57	51.8		
PE with severe features	20	8.5	12	14.8	13	11.8		
*PE without severe features	9	3.8	4	4.9	9	8.2		
chronic hypertension	0	0	0	0	1	.9		
Statistically significant								

Graph 6



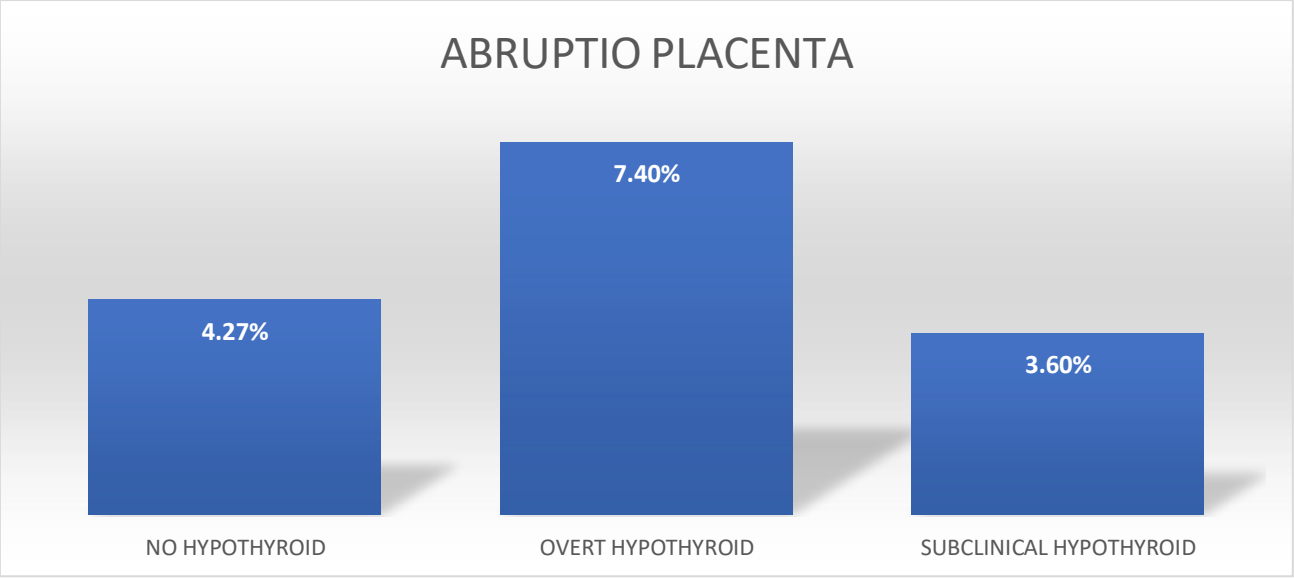
The table and graph that follows demonstrates the association between maternal hypothyroidism and placental abruption

Both overt and subclinical hypothyroidism are positively corelated with abruptio placenta and found to be statistically significant (p value <0.05)

TABLE 7- EFFECT OF MATERNAL HYPOTHYROIDISM ON ABRUPTIO PLACENTA

	ABRUPTIO PLACENTA							
	NO HYPOTHYROID		OVERT HYPOTHYROID		SUBCLINICAL HYPOTHYROID		CHI-SQUARE VALUE	P (SIGNIFICANCE)
	N	%	N	%	N	%	113.084	<0.00001
YES	10	4.27	6	7.4	4	3.6		
NO	226	100	75	92.6	106	96.4		
TOTAL	236	100	81	100	110	100		
Statistically significant								

Graph 7



The table and graph that follows demonstrates the impact of maternal hypothyroidism on preterm births

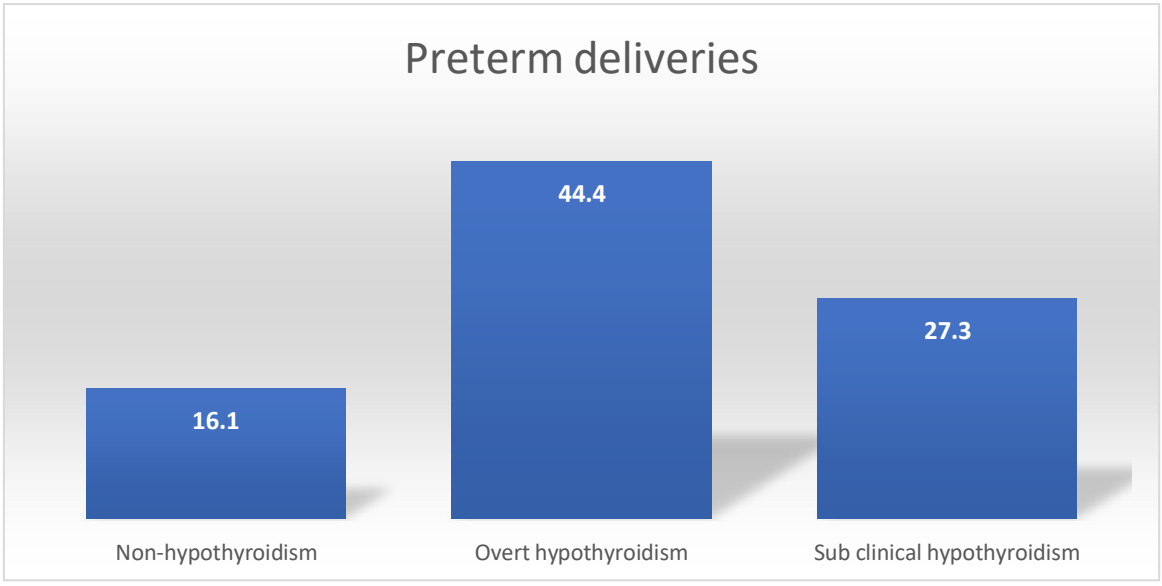
Both overt and subclinical hypothyroidism have affected preterm deliveries and shown to be statistically significant (p value < 0.05)

In our study, late preterm, defined as between 34 +0/7 and 37 +6/7, is the most typical (55.5percent)

TABLE 8- EFFECT OF MATERNAL HYPOTHYROIDISM ON PRETERM DELIVERIES

	PRETERM							
	NO HYPOTHYROID		OVERT HYPOTHYROID		SUBCLINICAL HYPOTHYROID		CHI-SQUARE VALUE	P (SIGNIFICANCE)
	N	%	N	%	N	%	11.890	0.003
YES	38	16.1	36	44.4	36	27.3		
NO	198	83.9	45	55.6	74	72.7		
TOTAL	236	100	81	100	110	100		
Statistically significant								

Graph 8



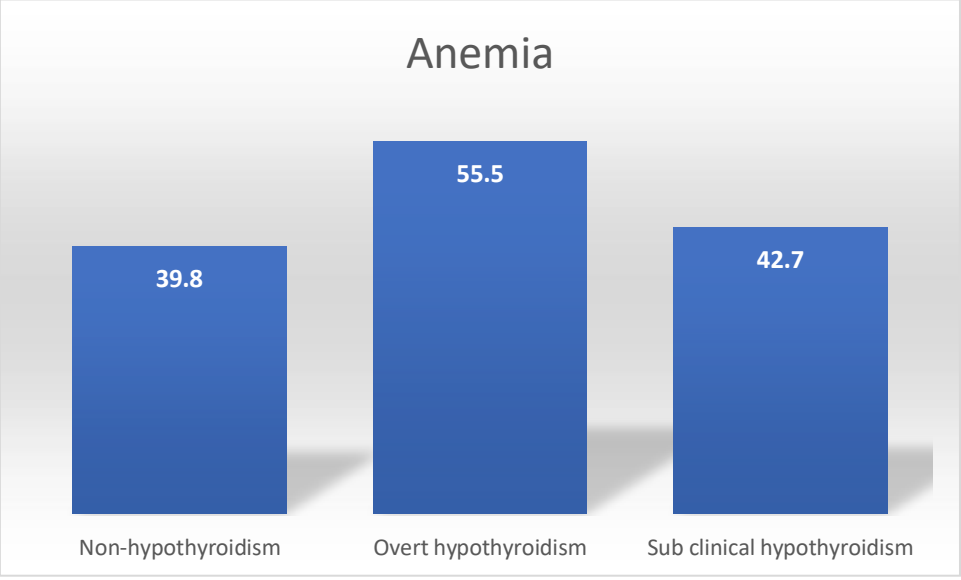
The prevalence of anaemia among hypothyroid individuals is described in the table and graph below.

Microcytic hypochromic anaemia is the most common type (30.8%), and moderate anaemia (42.2%), which is between 7 and 10 gm/dl, is the most common kind among hypothyroid patients. Both overt and subclinical hypothyroidism have positive association with anemia and found to be statistically insignificant (p value >0.05).

TABLE 9- EFFECT OF MATERNAL HYPOTHYROIDISM ON ANEMIA

	ANEMIA							
	NO HYPOTHYROID		OVERT HYPOTHYROID		SUBCLINICAL HYPOTHYROID		CHI SQUARE VALUE	P (SIGNIFICANCE)
	N	%	N	%	N	%	2.503	0.286
YES	94	39.8	45	55.5	47	42.7		
NO	142	60.2	36	44.5	63	57.3		
TOTAL	236	100	81	100	110	100		
Statistically insignificant								

Graph 9



The table and graph below describe the association between need for caesarean deliveries in hypothyroid patients.

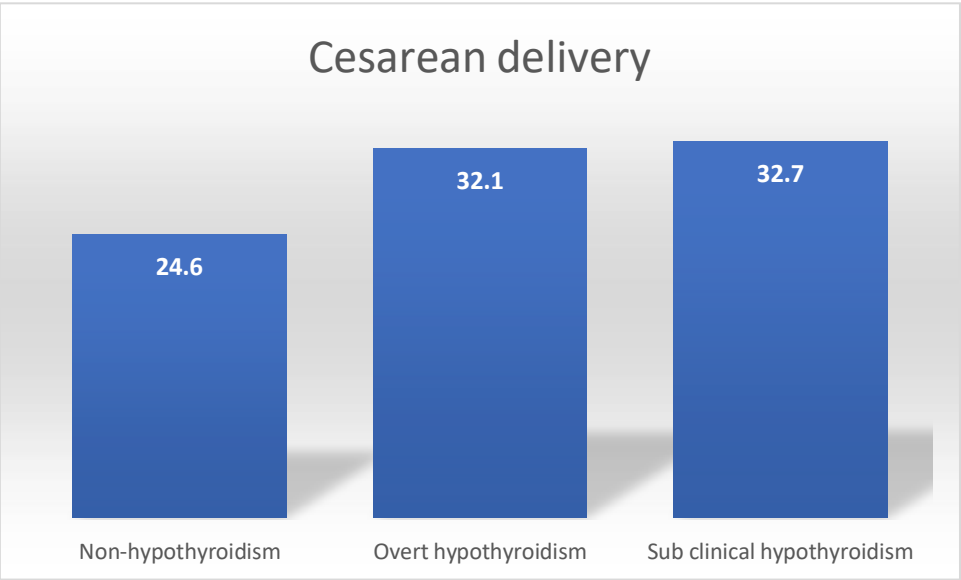
Both overt and subclinical hypothyroidism have impacted on need for caesarean delivery However, using chi square test, statistically no significant difference was observed in our study (p value>0.05)

The most typical of these is the multigravida who has a history of prior caesarean deliveries and elects to have another one.

TABLE 10- NEED FOR CESAREAN DELIVERY IN MATERNAL HYPOTHYROIDISM

	CESAREAN SECTION							
	NO HYPOTHYROID		OVERT HYPOTHYROID		SUBCLINICAL HYPOTHYROID		CHI-SQUARE VALUE	P (SIGNIFICANCE)
	N	%	N	%	N	%	1.898	0.755
YES	58	24.6	26	32.1	36	32.7		
NO	178	75.4	55	67.9	74	67.3		
TOTAL	236	100	81	100	110	100		
Statistically insignificant								

Graph 10



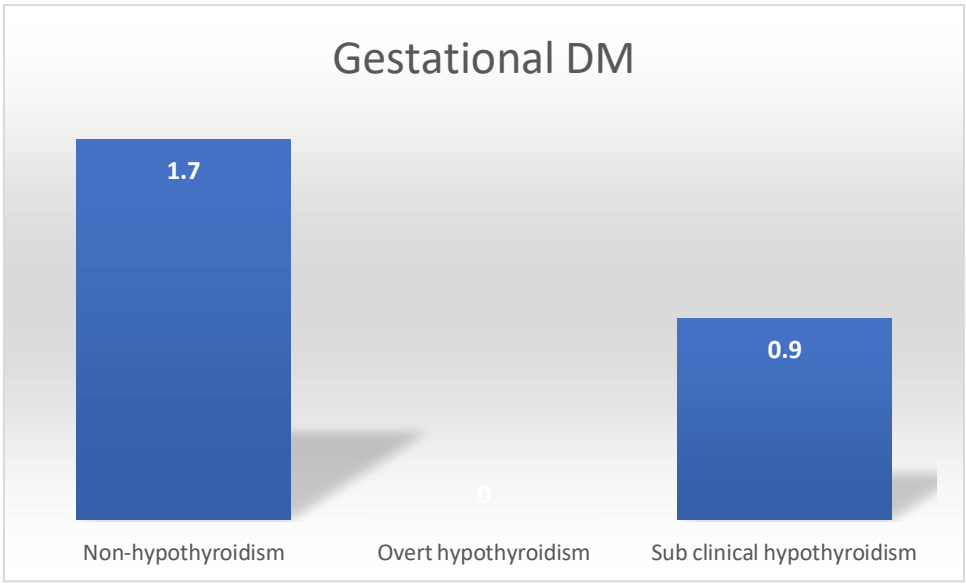
The effect of hypothyroidism on gestational diabetes is described in the table and graph below.

In the subclinical hypothyroidism group, there was just one patient (0.9%) with gestational diabetes, and it was determined to be statistically insignificant (p value >0.05)

TABLE 11- EFFECT OF MATERNAL HYPOTHYROIDISM ON GESTATIONAL DM

	GESTATIONAL DM							
	NO HYPOTHYROID		OVERT HYPOTHYROID		SUBCLINICAL HYPOTHYROID		CHI-SQUARE VALUE	P (SIGNIFICANCE)
	N	%	N	%	N	%	1.303	0.521
YES	4	1.7	0	0	1	0.9		
NO	232	98.3	81	100	109	99.1		
TOTAL	236	100	81	100	110	100		
Statistically insignificant								

Graph 11



This table and graph illustrate the association between maternal hypothyroidism af oligohydramnios.

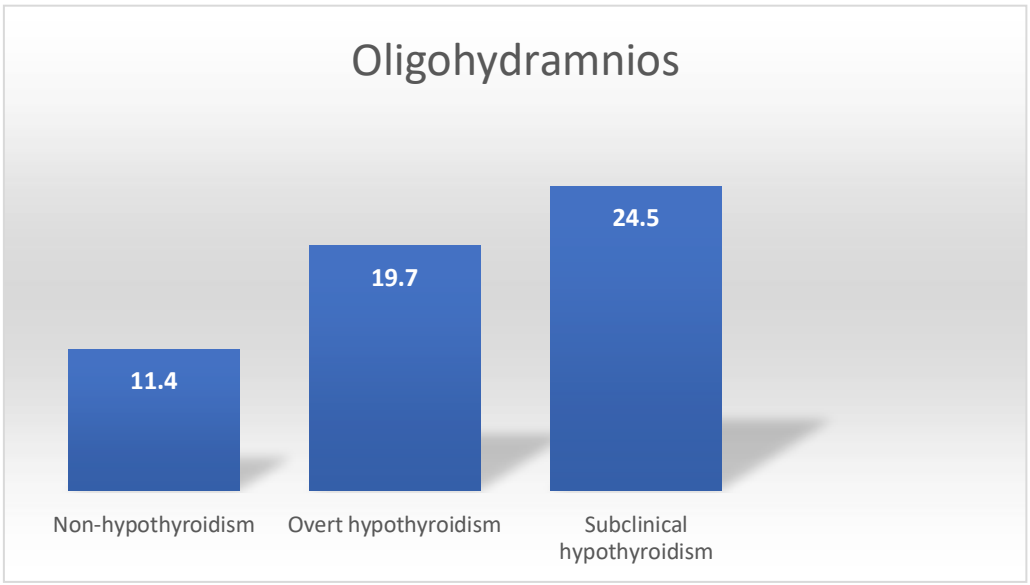
In the subclinical hypothyroidism group, 24.5 percent of oligohydramnios were found compared to 19.7 percent in the overt hypothyroidism group and both have an impact on oligohydramnios

However, it is determined to be statistically insignificant (p value >0.05) using the chi square test

TABLE 12- EFFECT OF MATERNAL HYPOTHYROIDISM ON OLIGOHYDRAMNIOS

	OLIGOHYDRAMNIOS							
	NO HYPOTHYROID		OVERT HYPOTHYROID		SUBCLINICAL HYPOTHYROID		CHI-SQUARE VALUE	P (SIGNIFICANCE)
	N	%	N	%	N	%	3.621	0.164
YES	27	11.4	16	19.7	27	24.5		
NO	209	88.6	65	80.2	83	75.5		
TOTAL	236	100	81	100	110	100		
Statistically insignificant								

Graph 12



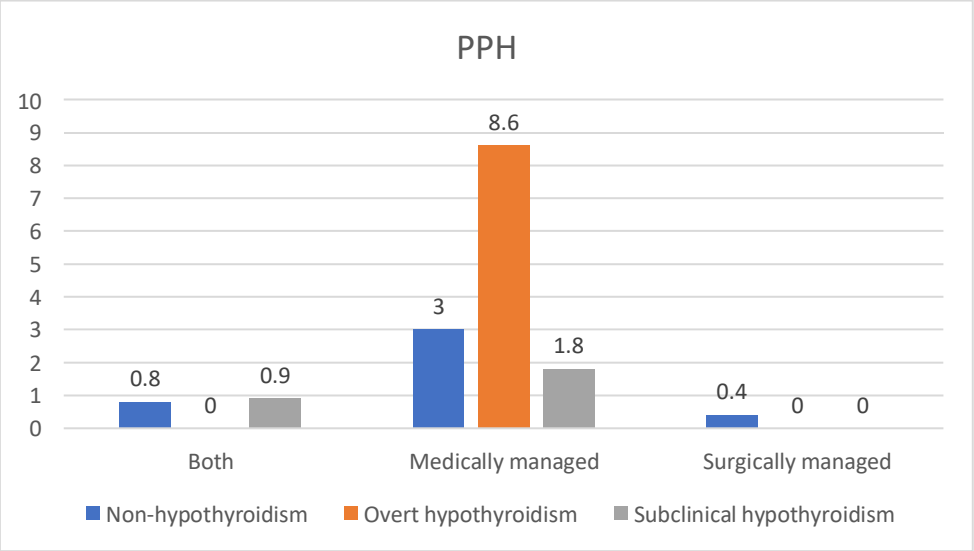
This chart and table illustrate the association of hypothyroidism on PPH.

It is determined to be statistically insignificant (p value >0.05) using the chi square test because only 10 out of 191 hypothyroid individuals (11.3 percent) had PPH, and both overt and subclinical hypothyroidism have an impact on PPH with medically controlled PPH being the most common type.

TABLE 13- EFFECT OF MATERNAL HYPOTHYROIDISM ON PPH

	POSTPARTUM HEMORRHAGE							
	NO HYPOTHYROID		OVERT HYPOTHYROID		SUBCLINICAL HYPOTHYROID		CHI - SQUARE VALUE	P (SIGNIFICANCE)
	N	%	N	%	N	%	9.745	0.136
BOTH	2	0.8	0	0	1	0.9		
MEDICALLY MANAGED	7	3	7	8.6	2	1.8		
SURGICALLY MANAGED	1	0.4	0	0	0	0		
NO	226	95.8	74	91.3	107	97.3		
TOTAL	236	100	81	100	110	100		
Statistically insignificant								

Graph 13



The impact of maternal hypothyroidism on other maternal problems is depicted in this chart and graph.

Among other problems, polyhydramnios (2.5%) and gestational thrombocytopenia (4.3%) were frequently seen in hypothyroid patients

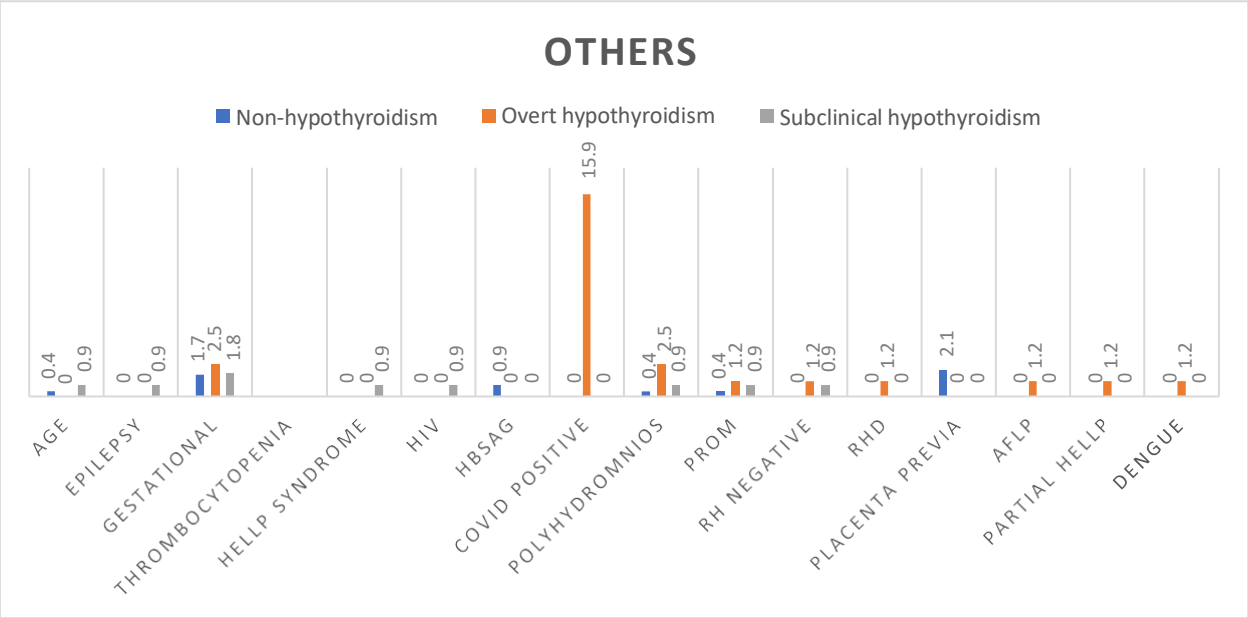
Chi square analysis shows that it has no statistical significance (p value>0.05)

TABLE 14- EFFECT OF MATERNAL HYPOTHYROIDISM ON OTHER MATERNAL COMPLICATIONS

OTHERS								
	NON HYPOTHYROIDISM		OVERT HYPOTHYROIDISM		SUBCLINICAL HYPOTHYROIDISM		CHI - SQUARE VALUE	P (SIGNIFICANCE)
	N	%	N	%	N	%	40.363	0.366
Acute gastroenteritis	1	0.4	0	0	1	0.9		
Epilepsy	0	0	0	0	1	0.9		
Gestational Thrombocytopenia	4	1.7	2	2.5	2	1.8		
HELLP SYNDROME	0	0	0	0	1	0.9		
HIV positive	0	0	0	0	1	0.9		
HBSAG positive	1	0.9	0	0	0	0		
Covid Positive	0	0	13	15.9	0	0		
Polyhydramnios	1	0.4	2	2.5	1	0.9		
PROM	1	0.4	1	1.2	1	0.9		
Rh negative status	0	0	1	1.2	1	0.9		

RHD(rheumatic heart disease)	0	0	1	1.2	0	0	
Placenta Previa	5	2.1	0	0	0	0	
Acute Fatty Liver of Pregnancy	0	0	1	1.2	0	0	
Partial HELLP	0	0	1	1.2	0	0	
Dengue	0	0	1	1.2	0	0	
NONE	223	94.1	58	71.9	101	91.9	
TOTAL	236	100	81	100	110	100	
Statistically insignificant							

Graph 14



EFFECT OF MATERNAL HYPOTHYROIDISM ON NEONATAL OUTCOMES

This below graph and table illustrate the association of foetal growth restriction with maternal hypothyroidism.

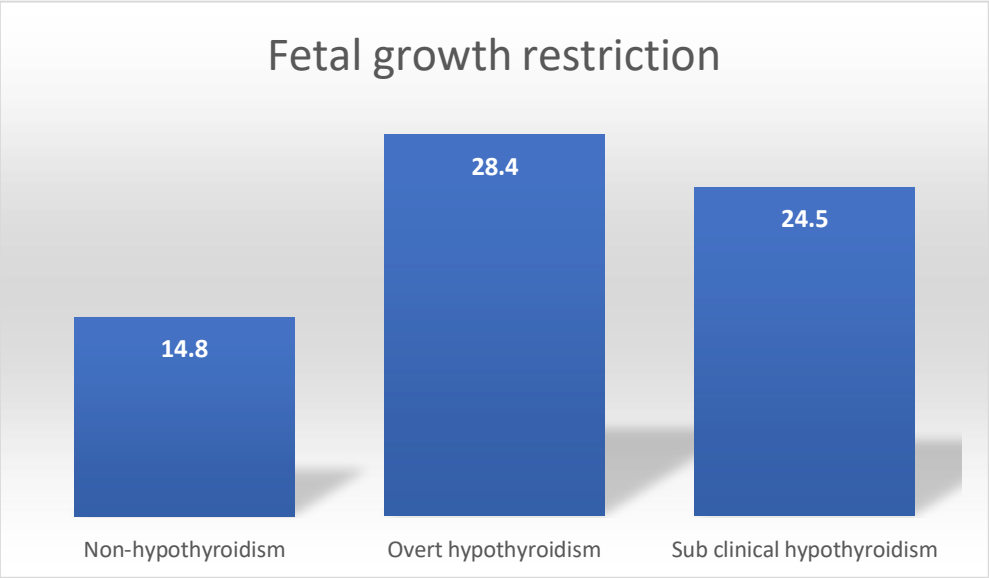
Both subclinical and overt hypothyroidism have affected fetal growth restriction

Despite the fact that there is a clinical difference, the chi square test found no statistically significant difference (p value >0.05)

TABLE 15- EFFECT OF MATERNAL HYPOTHYROIDISM ON FETAL GROWTH RESTRICTION

	FETAL GROWTH RESTRICTION							
	NO HYPOTHYROID		OVERT HYPOTHYROID		SUBCLINICAL HYPOTHYROID		CHI-SQUARE VALUE	P (SIGNIFICANCE)
	N	%	N	%	N	%	0.054	0.973
YES	35	14.8	23	28.4	27	24.5		
NO	201	85.2	58	71.6	83	75.5		
TOTAL	236	100	81	100	110	100		
Statistically insignificant								

Graph 15



The effects of maternal hypothyroidism on intrauterine death are depicted in this graph and chart.

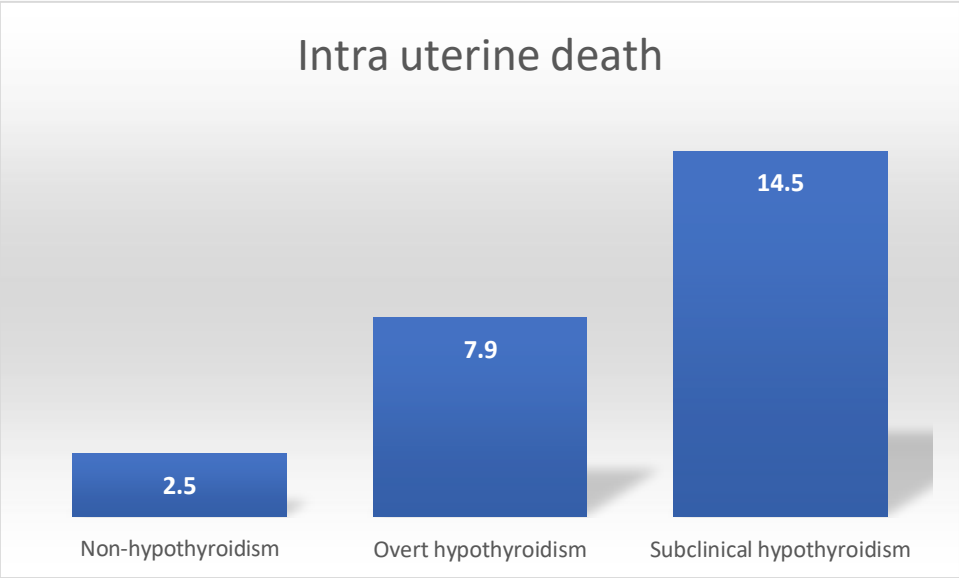
Both overt hypothyroidism and subclinical hypothyroidism have positive corelation with intrauterine death

And in our analysis, these deaths were most frequently observed in preterm patients and it is statistically insignificant (p value>0.05)

TABLE 16- EFFECT OF MATERNAL HYPOTHYROIDISM ON INTRAUTRINE DEATH

	INTRAUTERINE DEATH							
	NO HYPOTHYROID		OVERT HYPOTHYROID		SUBCLINICAL HYPOTHYROID		CHI-SQUARE VALUE	P (SIGNIFICANCE)
	N	%	N	%	N	%	5.306	0.070
YES	6	2.5	6	7.9	16	14.5		
NO	230	97.5	75	92.1	94	85.5		
TOTAL	236	100	81	100	110	100		
Statistically insignificant								

Graph 16



We showed the association between maternal hypothyroidism and low birth weight in this chart and graph.

Both subclinical and overt hypothyroidism have affected low birth weight

The most prevalent weight range, 1500–2000 grams, accounts for 18.9% of those between 2000–2500 grams (8.4%)

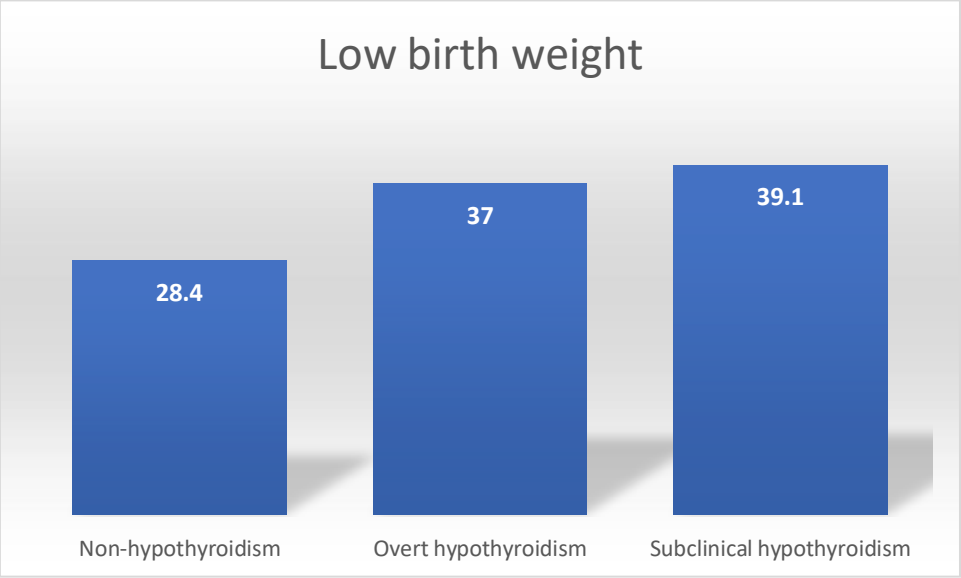
1000-1500 (very LBW) – 6%, 500-1000 (extremely LBW)- 1.7%

Even though there is a clinical difference, the chi square test reveals that it is statistically unimportant (p value>0.05)

TABLE 17- EFFECT ON OF MATERNAL HYPOTHYROIDISM LOW BIRTH WEIGHT

	LOW BIRTH WEIGHT							
	NO HYPOTHYROID		OVERT HYPOTHYROID		SUBCLINICAL HYPOTHYROID		CHI-SQUARE VALUE	P (SIGNIFICANCE)
	N	%	N	%	N	%	5.609	0.061
YES	67	28.4	30	37	43	39.1		
NO	169	71.6	51	63	67	60.9		
TOTAL	236	100	81	100	110	100		
Statistically insignificant								

Graph 17



The graph and figure below illustrate the impact of maternal hypothyroidism on neonatal hyperbilirubinemia.

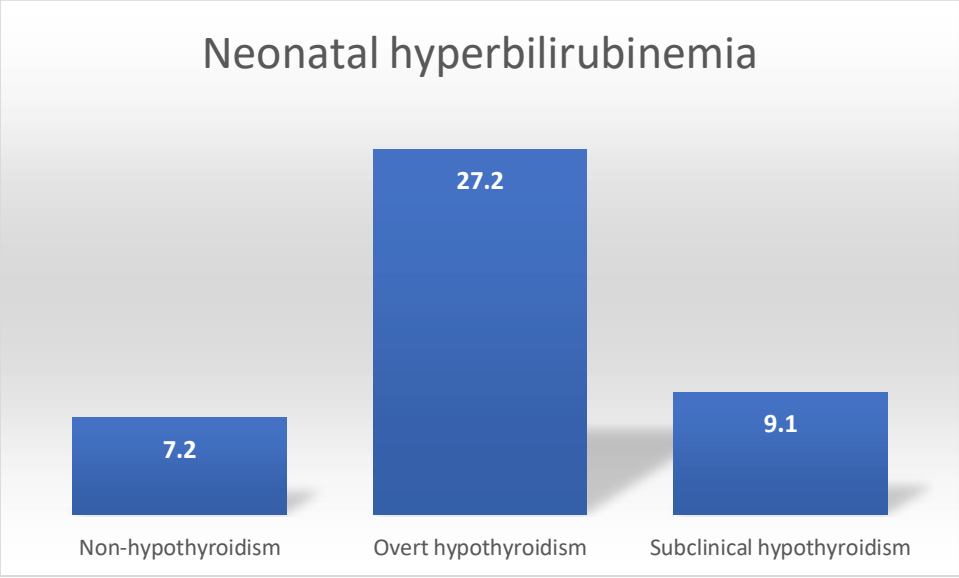
Both overt and subclinical hypothyroidism have affected neonatal hyperbilirubinemia

Using chi square test, clinical significance was determined to be unimportant (p value>0.05)

TABLE 18- EFFECT ON NEONATAL HYPERBILIRUBINEMIA

	NEONATAL HYPERBILIRUBINEMIA							
	NO HYPOTHYROID		OVERT HYPOTHYROID		SUBCLINICAL HYPOTHYROID		CHI-SQUARE VALUE	P (SIGNIFICANCE)
	N	%	N	%	N	%	3.565	0.168
YES	17	7.2	22	27.2	10	9.1		
NO	219	92.8	59	72.8	100	90.9		
TOTAL	236	100	81	100	110	100		
Statistically insignificant								

Graph 18



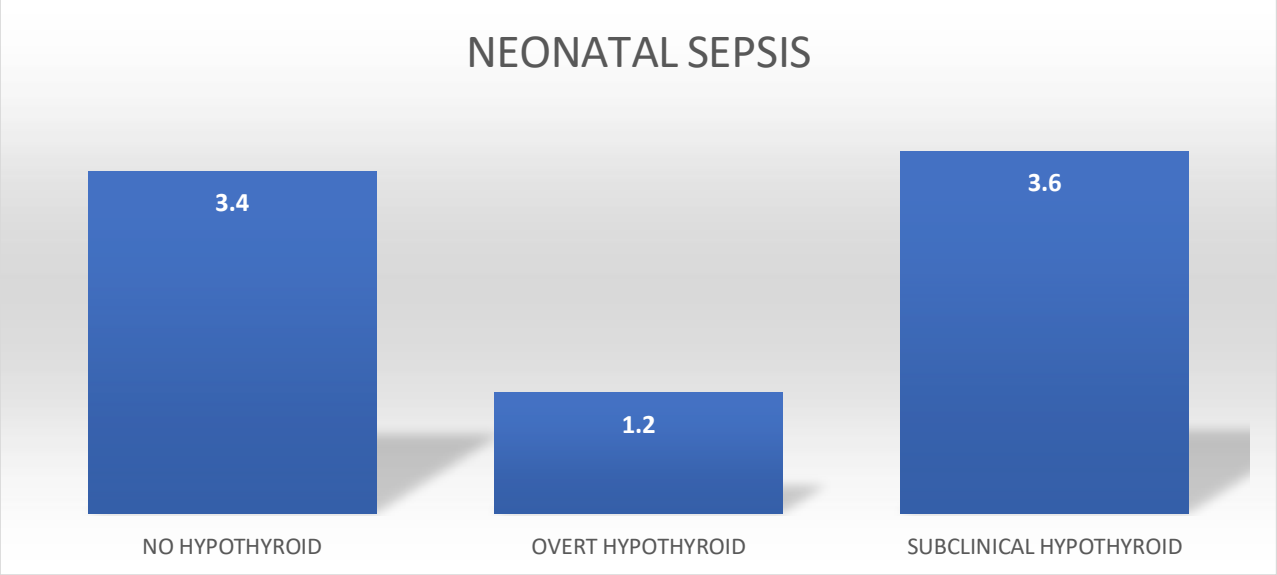
The impact of maternal hypothyroidism on new born sepsis is shown in this table and graph.

Both subclinical and overt hypothyroidism have affected neonatal sepsis, however this effect was shown to be clinically insignificant (p value>0.05)

TABLE 19- EFFECT OF MATERNAL HYPOTHYROIDISM ON NEONATAL SEPSIS

	NEONATAL SEPSIS							
	NO HYPOTHYROID		OVERT HYPOTHYROID		SUBCLINICAL HYPOTHYROID		CHI-SQUARE VALUE	P (SIGNIFICANCE)
	N	%	N	%	N	%	0.948	0.623
YES	8	3.4	1	1.2	4	3.6		
NO	228	96.6	80	98.8	106	96.4		
TOTAL	236	100	81	100	110	100		
Statistically insignificant								

Graph 19



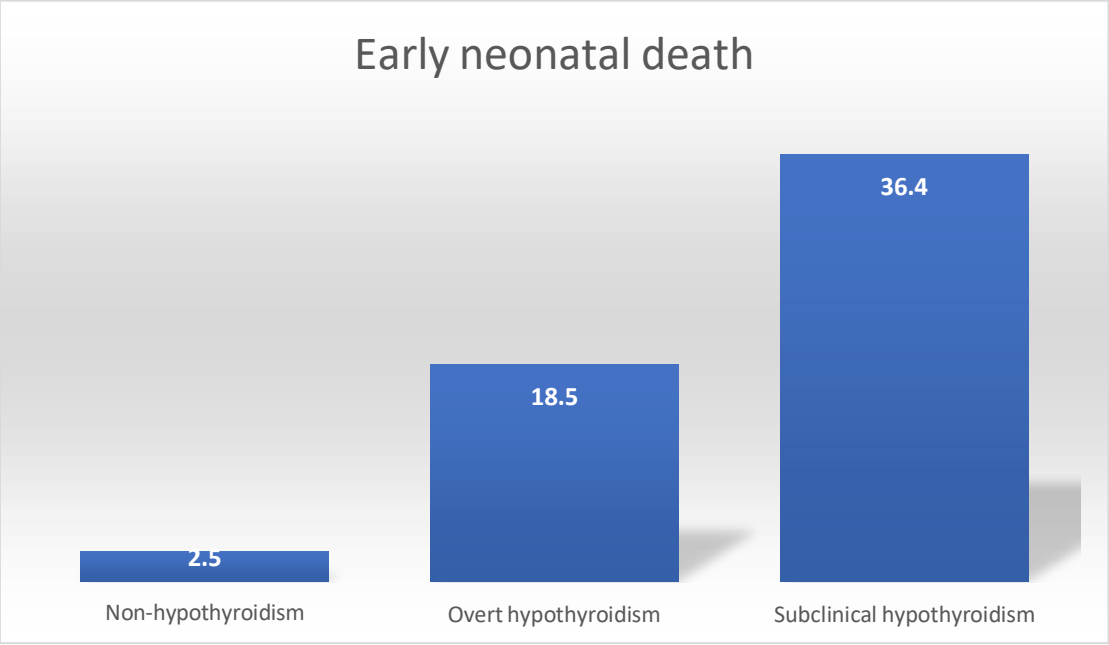
This chart and graph demonstrate the impact of maternal hypothyroidism on early neonatal death.

In our study, the majority of early neonatal deaths—fetuses who pass away within the first six days after birth—occur in the group of people who have both overt and subclinical hypothyroidism and it is statistically insignificant (p value>0.05%)

TABLE 20- EFFECT OF MATERNAL HYPOTHYROIDISM ON EARLY NEONATAL DEATH

	EARLY NEONATAL DEATH							
	NO HYPOTHYROID		OVERT HYPOTHYROID		SUBCLINICAL HYPOTHYROID		CHI-SQUARE VALUE	P (SIGNIFICANCE)
	N	%	N	%	N	%	3.875	0.144
YES	6	2.5	15	18.5	7	6.4		
NO	230	97.5	66	81.5	103	93.6		
TOTAL	236	100	81	100	110	100		
Statistically insignificant								

Graph 20



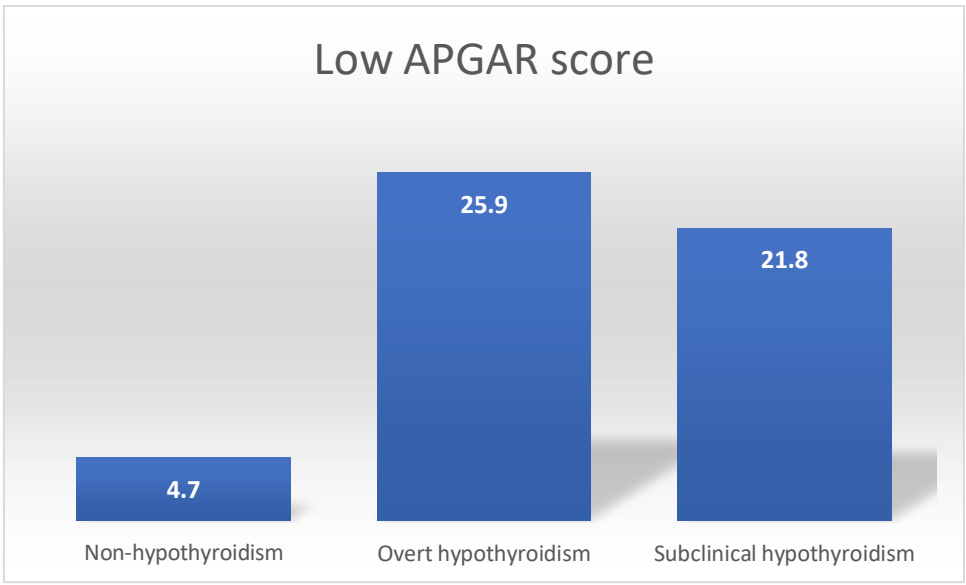
This graph and table demonstrate maternal hypothyroidism effects on APGAR scores.

Both overt and subclinical hypothyroidism have affected APGAR scores. It is determined in our study to be clinically significant using the chi square test (p value- 0.015)

TABLE 21- EFFECT OF MATERNAL HYPOTHYROIDISM ON LOW APGAR SCORE

	LOW APGAR SCORE							
	NO HYPOTHYROID		OVERT HYPOTHYROID		SUBCLINICAL HYPOTHYROID		CHI-SQUARE VALUE	P (SIGNIFICANCE)
	N	%	N	%	N	%	8.414	0.015
YES	11	4.7	19	25.9	24	21.8		
NO	226	95.3	62	74.1	86			
TOTAL	236	100	81	100	110	100		
Statistically significant								

Graph 21



The effects of maternal hypothyroidism on additional new born problems are depicted in this graph and chart.

These all were affected by overt and subclinical hypothyroidism and determined to be clinically significant (p value>0.05) using the chi square test.

TABLE 22- EFFECT OF MATERNAL HYPOTHYROIDISM ON OTHER FACTORS

ANY OTHERS, SPECIFY								
	NO HYPOTHYROID		OVERT HYPOTHYROID		SUBCLINICAL HYPOTHYROID		CHI-SQUARE VALUE	P (SIGNIFICANCE)
	N	%	N	%	N	%	34.852	0.010
HIE	1	0.4	1	1.2	0	0		
MAS	2	0.8	1	1.2	1	0.9		
RDS	4	1.7	1	1.2	4	3.6		
HYPOGLYCEMIC SEIZURES	0	0	0	0	1	0.9		
MENINGITIS	0	0	1	1.2	0	0		
BIRTH ASPHYXIA	0	0	2	2.5	0	0		
CARDIAC ARREST	0	0	1	1.2	0	0		
CLEFT LIP	0	0	1	1.2	0	0		
PNEUMONIA	0	0	0	0	1	0.9		
NONE	229	97.1	73	90.3	103	93.7		
TOTAL	236	100	81	100	110	100		
Statistically significant								

Graph 22

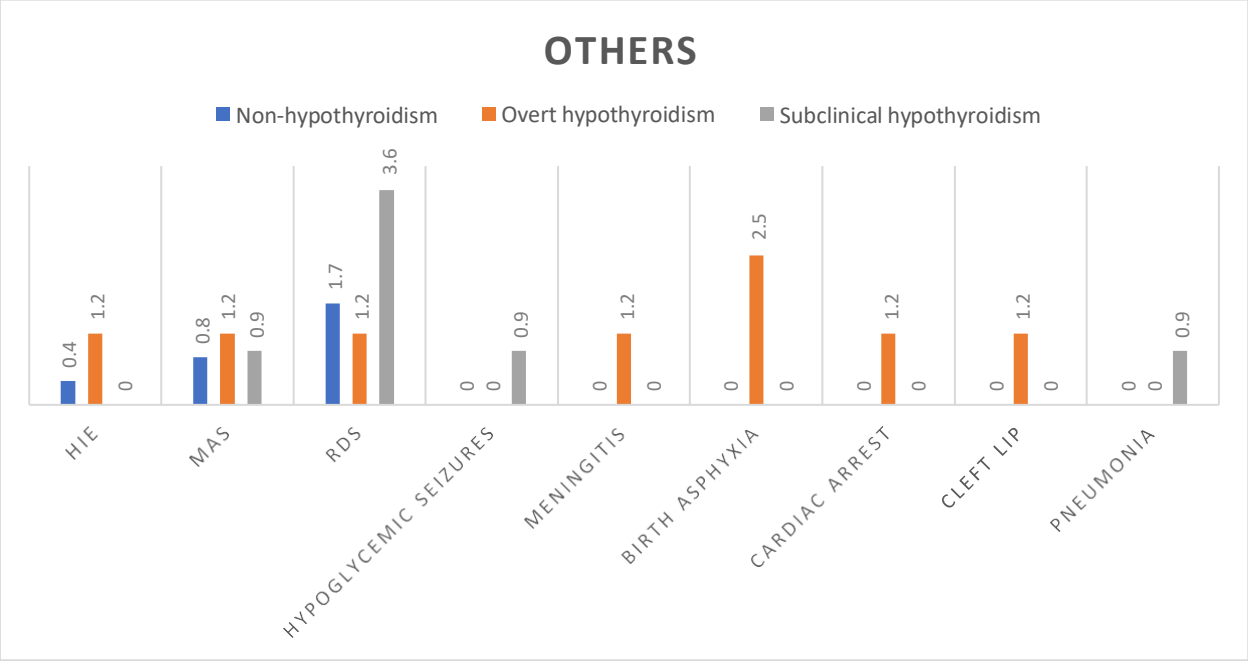


TABLE 23- RELATIONSHIP OF TPO ANTIBODIES AND HYPERTENSIVE DISORDERS OF PREGNANCY

The prevalence and association between TPO antibodies and hypertensive diseases are shown in this graph and chart.

The majority of individuals with TPO antibodies (16.1%) have PE, with severe symptoms being the most prevalent type.

A clinically significant finding was made as well and it is statistically significant (p value>0.05)

	NO TPO	**TPO ANTIBODIES PRESENT**	**CHI-SQUARE VALUE**	**P (SIGNIFICANCE)**
ECLAMPSIA	6 (2.5%)	10 (8.1%)	15.791	0.015
GESTATIONAL HYPERTENSION	11 (11%)	13 (10.5%)		
IMMINENT ECLAMPSIA	2 (0.8%)	5 (4%)		
PE WITH SEVERE FEATURES	20 (8.5%)	20 (16.1%)		
PE WITHOUT SEVERE FEATURES	9 (3.8%)	8 (6.5%)		
CHRONIC HYPERTENSION	0	1 (0.8%)		
Statistically significant				

Graph 23

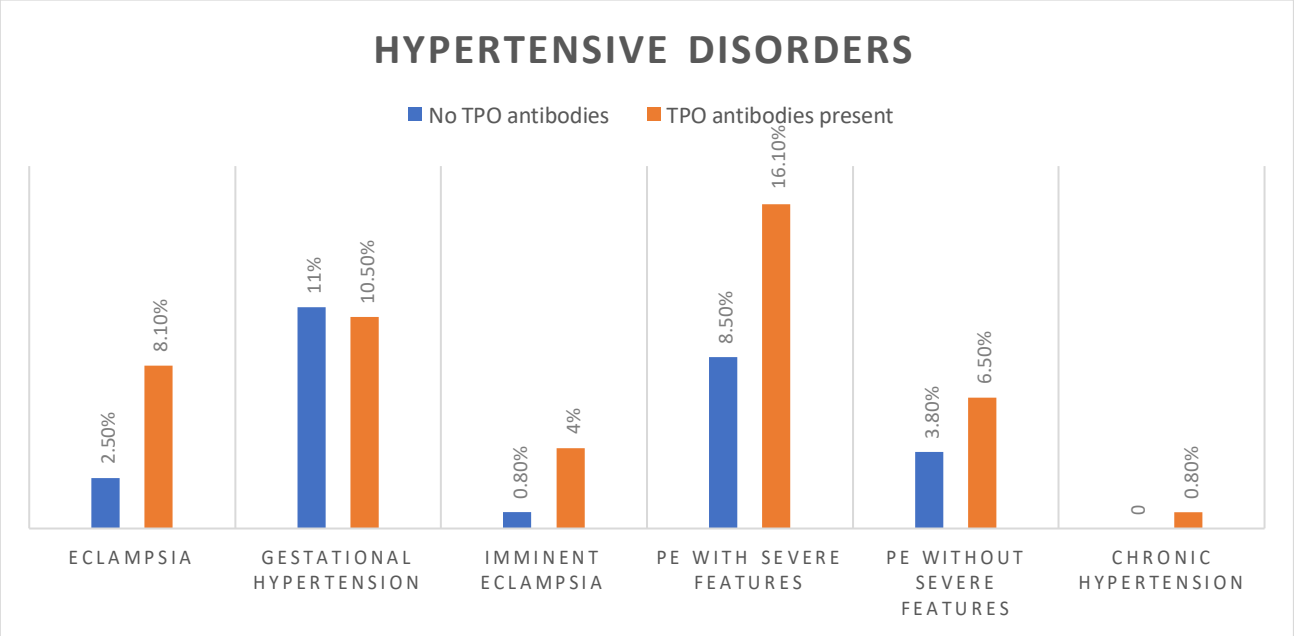


TABLE 24- OBSTETRICAL OUTCOMES CONCERNING TPO ANTIBODIES

The various obstetrical outcomes related to TPO antibodies are displayed in the table and chart below.

Patients with TPO antibodies experience more unfavourable obstetrical outcomes than those who do not, with anaemia (43.5%) and preterm births being the most prevalent (21.8 percent)

Even if there is clinical significance, using chi square charts has no statistical relevance (p value>0.05)

	NO TPO ANTIBODIES	TPO ANTIBODIES PRESENT
PPH	10 (4.2%)	6 (4.8%)
ABRUPTION	5 (2.1%)	9 (7.3%)
PRETERM DELIVERY	38 (16.1%)	27 (21.8%)
ANEMIA	94 (39.8%)	54 (43.5%)
CESAREAN SECTION	56 (23.7%)	22 (17.7%)
GESTATIONAL DM	4 (1.7%)	1 (0.8%)
OLIGOHYDRAMNIOS	27 (11.4%)	18 (14.5%)

Graph 24

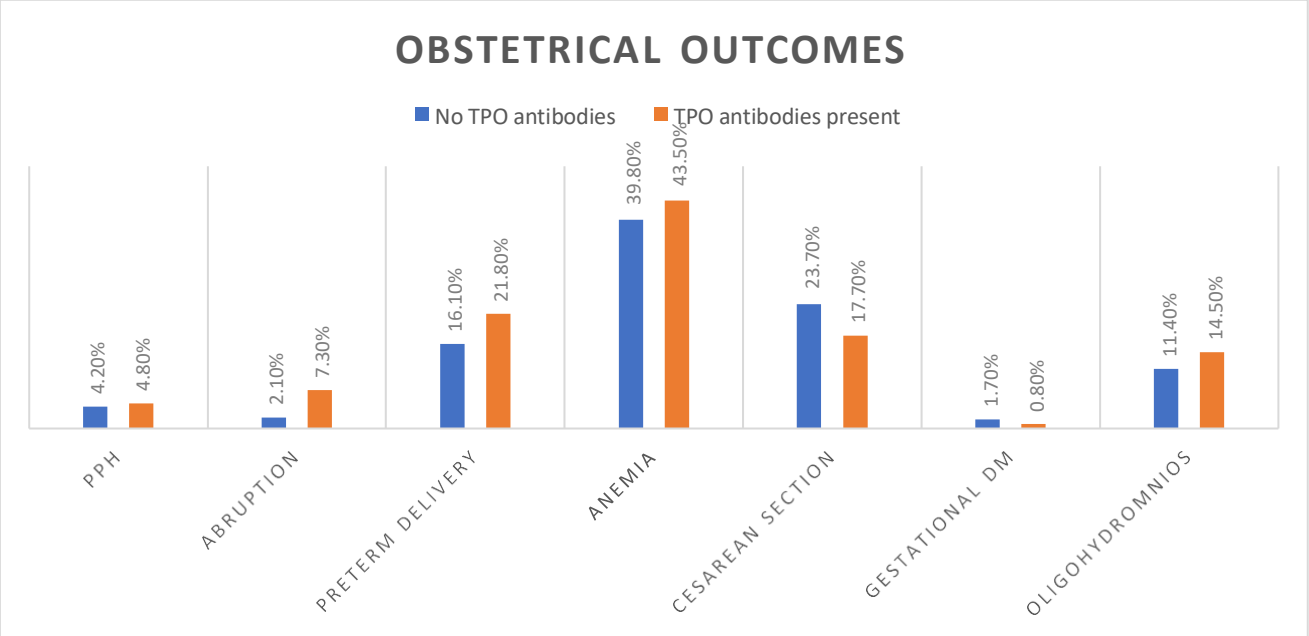


TABLE 25- NEONATAL OUTCOMES CONCERNING TPO ANTIBODIES

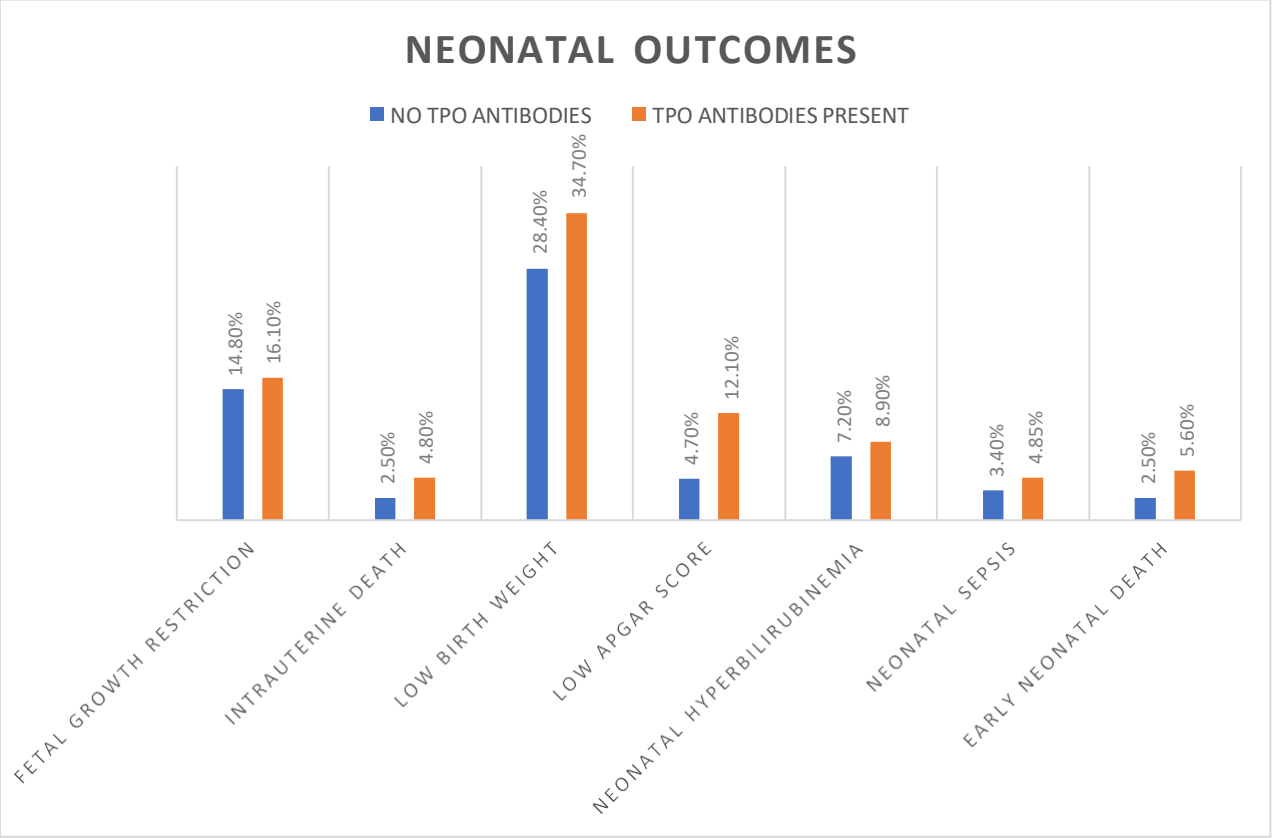
The table and graph below show some negative neonatal outcomes related to TPO antibodies.

Low birth weight (34.7 percent) and foetal development restriction are the most prevalent neonatal outcomes in patients with TPO antibodies (16.1 percent)

No statistical significance (p value>0.05) was discovered despite the clinical importance.

	NO TPO ANTIBODIES	**TPO ANTIBODIES PRESENT**
FETAL GROWTH RESTRICTION	35 (14.8%)	20 (16.1%)
INTRAUTERINE DEATH	6 (2.5%)	6 (4.8%)
LOW BIRTH WEIGHT	67 (28.4%)	43 (34.7%)
LOW APGAR SCORE	11 (4.7%)	15 (12.1%)
NEONATAL HYPERBILIRUBINEMIA	17 (7.2%)	11 (8.9%)
NEONATAL SEPSIS	8 (3.4%)	6 (4.850
EARLY NEONATAL DEATH	6 (2.5%)	7 (5.6%)

Graph 25



DISCUSSION

This observational study was carried out at B. M. Patil Medical College and Research Institute in Vijayapura. A total of 427 patients underwent screening for hypothyroidism.

The primary goal is to research how maternal hypothyroidism affects obstetrical and neonatal outcomes.

Our study group's average age ranges from 20 years to 24 years.

Primagravida and multigravida with prevalence rates of 41.9 and 58.07 percent, respectively.

In our study, the prevalence of overt hypothyroidism is 18.9%, but Sahu et alsurvey .'s [102] found only 4.56 percent, which is 13% lower than our study's prevalence.

The prevalence of overt hypothyroidism in the other investigations by Weiping Teng et al. [114], Tuija Mannisto et al. [115], and Stagnaro et al. [116] is substantially lower than in our study at less than 1%, 1.3 percent, and 0.4 percent, respectively.

TABLE 26- Prevalence of Overt Hypothyroidism in various studies

Our study	**18.9%**
Sahu et al	0.7%
Tuija Mannisto et al	1.3%
Weiping et al	1%
Stagnaro et al	0.4%

Our study found that 25.7 percent of participants had subclinical hypothyroidism, which is similar to the 23 percent found in the survey conducted by Casey BM et al. [117]

The prevalence of subclinical hypothyroidism was quite low in the other studies by Sahu et al.[102], Tuiha Mannisto et al.[115], and Weiping et al.[114], coming in at 6.47 percent, 3.5 percent, and 3.5 percent, respectively.

TABLE 27- Prevalence of subclinical hypothyroidism in various studies

Our study	25.7%
Casey B. Miller and colleagues	23%
Sahu et al.	6.47%
Tuija Mannisto et al.	3.5%
Weiping et al.	3-5%

TABLE 28- Prevalence of subclinical and overt hypothyroidism

	PREVALENCE	
STUDIES	**OVERT HYPOTHYROIDISM**	**SUBCLINICAL HYPOTHYROIDISM**
Our study	18.9%	25.7%
Sahu et al	0.7%	6.47%
Tuija et al	1.3%	3.5%
Weiping et al	1%	3-5%

Adverse Obstetric and Neonatal Outcomes in Hypothyroidism: Overt and Subclinical

In our study, the incidence of adverse obstetrical outcomes in overt and subclinical hypothyroidism, respectively, was

- Hypertensive disorders of pregnancy: 20.3%, 48.2%
- Pre-eclampsia: 19.7%, 20%
- Abruption: 7.4%, 3.6%
- Preterm deliveries: 44.4%, 27.3%
- Anemia: 55.5%, 42.7%
- Cesarean deliveries: 52.1%, 32.7%
- Oligohydramnios: 19.7%, 24.5%
- PPH- 8.6%, 2.7%

The incidence of adverse neonatal outcomes is higher in overt hypothyroidism than in subclinical hypothyroidism.

- FGR- 28.4%, 24.5%
- IUD- 7.9%, 14.5%
- LBW- 37%, 39.1%
- Neonatal hyperbilirubinemia: 27.2%, 9.1%
- Neonatal sepsis: 1.2%, 3.6%
- Early neonatal deaths: 18.5%, 6.4%
- Low APGAR scores: 25.9%, 21.8%

OVERT HYPOTHYROIDISM

In the study done by Sahu MT et al.,[102] the incidence of complications like PE (20.7%), preterm deliveries (4.7%), and FGR (13.8%)

In another similar study by Leung et al. [118], incidences were 22% for PE and 22% for LBW, which is very similar to our study.

In the study by Abolovich et al. [119], complications such as placental abruption (19%) and LBW (6%) were identified.

In our study, there is a significant association between overt hypothyroidism and complications like hypertensive disorders of pregnancy, preterm deliveries, abruption placenta, low APGAR scores, pneumonia, and birth asphyxia.

The incidence of complications varied in different studies, but some complications, like pre-eclampsia and abruption incidences, are comparable.

TABLE 29- Incidence of adverse obstetrical and neonatal outcomes in various studies of overt hypothyroidism

STUDIES	PE	ABRUPTIO PLACENTA	PRETERM DELIVERIES	FGR	LBW
Our study	19.7%	7.4%	44.4%	28.4%	37%
Leung et al	22%	-	-	-	22%
Sahu MT et al	20.7%	-	4.7%	13.8%	-
Ablovich et al	-	19%	-	-	6%

SUBCLINICAL HYPOTHYROIDISM

In a study conducted by Leung et al. [118], the incidence of adverse outcomes such as PE (15%) was very comparable to our study, whereas the incidences of PTD (9%), LBW (9%), and other outcomes were very low compared to our study.

In the other similar study by Sahu et al. [102] there were complications like PE (9.8%), PTD (10.35), and FGR (2.4%), but in these two studies there were no complications like abruption and low APGAR scores, which were very significant in our study at 3.6% and 21.8%, respectively.

TABLE 30- Incidence of adverse obstetrical and neonatal outcomes in various studies of subclinical hypothyroidism

STUDIES	PE	ABRUPTIO PLACENTA	PTD	FGR	LBW	LOW APGAR SCORE
Our study	20%	3.6%	27.3%	24.5%	39.1%	21.8%
Leung et al	15%	-	9%	-	-	-
Sahu et al	9.8%	-	10.3%	2.4%	2.5%	-

The presence of TPO antibodies and adverse obstetrical and neonatal outcomes

In our study, for all women whose TSH levels were >3 microIU/L, TPO antibody levels were measured, and we found that there was a higher incidence of adverse obstetrical and neonatal outcomes in women with the presence of TPO antibodies compared to women without antibodies.

When antibody levels exceeded 0.9 IU/ml, the negative effects became more pronounced.

In our study, a significant correlation was drawn between the presence of TPO antibodies and hypertensive disorders of pregnancy.

- TPO antibodies were found to increase the risk of pre-eclampsia in a cohort of over 600 women participating in a comparable study by Van De Boogard et al.[46] (1996).
- Similar to our findings, in other study [120] found that a patient with a high titer of TPO antibodies had a three-fold increased probability of experiencing an abruption (7.3 percent).
- In addition, Haddow et al. conducted a large cohort study.

Two big sample size meta-analyses:-

- He et al.[122] and
- Thangaratinam et al.[123]

Both demonstrated an increased risk of preterm birth with the presence of antibodies, which is very similar to our study (21.8%).

In our study, the incidence of LBW associated with TPO antibodies was 34.7%, as similarly proved by the other research conducted by Chen et al.[124]

LIMITATIONS

To accept our weaknesses,

- Because TSH is assessed after 72 hours, according to our study, neonates who passed away within that time frame could not have had their TSH levels checked.
- Regarding the treatment of hypothyroidism, there was no intervention in our study.
- Patients with high free T4 and TSH levels were not examined collectively.
- The prevalence and unfavourable outcomes of multifetal gestation pregnancy could not be evaluated since it was not included in the study.

CONCLUSION

The prevalence of thyroid problems in our study, including overt and subclinical hypothyroidism, is very high. In order to forecast negative obstetrical and neonatal outcomes and provide prompt care, we advise routine thyroid screening for all pregnant women, especially in the third trimester.

SUMMARY

- At the B. M. Patil Medical College and Research Institute in Vijayapura, the current study was carried out.
- An observational research was conducted.
- 427 pregnant women in their third trimester who were arriving at the labour and delivery wards for birth were part of the screening process.
- TSH levels were assessed in each woman.
- To investigate the frequency of overt, subclinical, and autoimmune hypothyroidism and its effects on obstetrical and neonatal outcomes, free T4 and TPO antibodies were supplied if TSH was greater than 3 microIU/litre.
- 18.9 percent of people have overt hypothyroidism, whereas 25.7 percent have subclinical hypothyroidism.
- Thirty-seven percent of the women who were examined had TPO antibodies.
- In our study, the effects of both overt and subclinical maternal hypothyroidism on obstetrical outcomes, respectively, were: hypertensive disorders of pregnancy: 20.3%, 48.2%; preeclampsia: 19.7%, 20%; abruption: 7.4%, 3.6%; preterm deliveries: 44.4%, 27.3%; anemia: 55.5%, 42.7%; caesarean sections: 52.1%, 32.7%; oligohydramnios: 19.7%, 24.5%; PPH: 8.6%, 2.7%
- In our study, the effects of both overt and subclinical maternal hypothyroidism on neonatal outcomes were, respectively, FGR: 28.4%, 24.5%, IUD: 7.9%, 14.5%, LBW: 37%, 39.1%, Neonatal hyperbilirubinemia: 27.2%, 9.1%, Neonatal sepsis: 1.2%, 3.6%, Early neonatal deaths: 18.5%, 6.4%; low APGAR scores: 25.9%, 21.8%
- In our study, we found that there is a strong association between hypertensive disorders and the presence of TPO antibodies.
- Women with TPO antibodies had a higher incidence of adverse obstetrical and neonatal outcomes than women without TPO antibodies.

REFERENCES

1. Glinoer D. The regulation of thyroid function in pregnancy: Pathways of endocrine adaptation from physiology to pathology. Endocr Rev [Internet]. 1997;18(3):404–33. Available from: http://dx.doi.org/10.1210/er.18.3.404

2. Salmeen KE, Block-Kurbisch IJ. Thyroid physiology during pregnancy, postpartum, and lactation. In: Maternal-Fetal and Neonatal Endocrinology. Elsevier; 2020. p. 53–60.

3. American College of Obstetrics and Gynecology. ACOG practice bulletin. Thyroid disease in pregnancy. Number 37, August 2002. American College of Obstetrics and Gynecology. Int J Gynaecol Obstet. 2002;79(2):171–80.

4. Ramprasad M, Bhattacharyya SS, Bhattacharyya A. Thyroid disorders in pregnancy. Indian J Endocrinol Metab [Internet]. 2012;16(Suppl 2):S167-70. Available from: http://dx.doi.org/10.4103/2230-8210.104031

5. Dhanwal DK, Bajaj S, Rajput R, Subramaniam KAV, Chowdhury S, Bhandari R, et al. Prevalence of hypothyroidism in pregnancy: An epidemiological study from 11 cities in 9 states of India. Indian J Endocrinol Metab [Internet]. 2016;20(3):387–90. Available from: http://dx.doi.org/10.4103/2230-8210.179992

6. Stagnaro-Green A. Thyroid antibodies and miscarriage: where are we at a generation later? J Thyroid Res [Internet]. 2011;2011:841949. Available from: http://dx.doi.org/10.4061/2011/841949

7. LeBeau SO, Mandel SJ. Thyroid disorders during pregnancy. Endocrinol Metab Clin North Am [Internet]. 2006;35(1):117–36, vii. Available from: http://dx.doi.org/10.1016/j.ecl.2005.09.009

8. Utiger RD. Maternal hypothyroidism and fetal development. N Engl J Med [Internet]. 1999;341(8):601–2. Available from: http://dx.doi.org/10.1056/NEJM199908193410809

9. Liu Y, Chen H, Jing C, Li F. The association between maternal subclinical hypothyroidism and growth, development, and childhood intelligence: A meta-analysis. J Clin Res Pediatr Endocrinol [Internet]. 2018;10(2):153–61. Available from: http://dx.doi.org/10.4274/jcrpe.4931

10. Richard K, Li H, A. K, Patel J, H. R. Placental transport of thyroid hormone and iodide. In: Recent Advances in Research on the Human Placenta. InTech; 2012.

11. Fuse Y. Development of the hypothalamic-pituitary-thyroid axis in humans. Reprod Fertil Dev [Internet]. 1996;8(1):1–21. Available from: http://dx.doi.org/10.1071/rd9960001

12. Antranik.org. [cited 2022 Nov 24]. Available from: https://antranik.org/wp-content/uploads/2011/12/thyroid-gland-left-and-right-lateral-lobes-

13. Haddow JE, Palomaki GE, Allan WC, Williams JR, Knight GJ, Gagnon J, et al. Maternal thyroid deficiency during pregnancy and subsequent neuropsychological development of the child. N Engl J Med [Internet]. 1999;341(8):549–55. Available from: http://dx.doi.org/10.1056/NEJM199908193410801

14. Pop VJ, Kuijpens JL, van Baar AL, Verkerk G, van Son MM, de Vijlder JJ, et al. Low maternal free thyroxine concentrations during early pregnancy are associated with impaired psychomotor development in infancy: Maternal FT4 and psychomotor development in infancy. Clin Endocrinol (Oxf) [Internet]. 1999;50(2):149–55. Available from: http://dx.doi.org/10.1046/j.1365-2265.1999.00639.x

15. Jones WS, Man EB. Thyroid function in human pregnancy.Premature deliveries and reproductive failures of pregnant women with low serum butanol-extractable

iodines.Maternal serum TBG and TBPA capacities. Am J Obstet Gynecol. 1969;104:909–14.

16. Montoro M, Collea JV, Frasier SD, Mestman JH. Successful outcome of pregnancy in women with hypothyroidism. Ann Intern Med [Internet]. 1981;94(1):31–4. Available from: http://dx.doi.org/10.7326/0003-4819-94-1-31

17. Chaurasia BD. BD chaurasia's human anatomy regional and applied dissection and clinical: Vol. 3: Head-neck brain. New Delhi, India: CBS Publishers & Distributors; 2013.

18. Kasper DL, Braunwald E. Disorders of Thyroid gland. Harrison's Principles of Internal Medicine. 2005;2:2104–26.

19. Sreelatha, Kamala, Nadagoudar S, Shruthi, Bharathi. A clinical review of obstetric and perinatal outcome in thyroid disorders. Endocrinol metab int j [Internet]. 2018;6(4). Available from: http://dx.doi.org/10.15406/emij.2018.06.00188

20. Kim E. Barrett Susan M. Barman Scott Boitano Heddwen L B. The Thyroid Gland. In: Lange Ganong's Review of Medical Physiology. New York, NY: McGraw-Hill; 2018. p. 301–40.

21. Marine D, Kimball OP. The prevention of simple goiter in man. A survey of the incidence and types of thyroid enlargements in the schoolgirls of Akron (Ohio), from the 5th to the 12th grades, inclusive--the plan of prevention proposed. 1917. J Lab Clin Med. 1990;115(1):128–36.

22. Arthur C . Guyton MD JEH. Thyroid Metabolic Hormones. In: TEXTBOOK OF Medical Physiology. Philadelphia, PA: Saunders; 2006. p. 931–43.

23. Korevaar TIM, Medici M, Visser TJ, Peeters RP. Thyroid disease in pregnancy: new insights in diagnosis and clinical management. Nat Rev Endocrinol [Internet]. 2017;13(10):610–22. Available from: http://dx.doi.org/10.1038/nrendo.2017.93

24. Glinoer D, de Nayer P, Bourdoux P, Lemone M, Robyn C, van Steirteghem A, et al. Regulation of maternal thyroid during pregnancy. J Clin Endocrinol Metab [Internet]. 1990;71(2):276–87. Available from: http://dx.doi.org/10.1210/jcem-71-2-276

25. Crooks J, Aboul-Khair SA, Turnbull AC, Hytten FE. The incidence of goiter during pregnancy. Lancet. 1964;

26. Crooks J, Tulloch MI, Turnbull AC, Davidson D, Skulason T. Comparative incidence of goiter in pregnancy in Iceland and Scotland. Lancet. 1967;

27. Burrow GN. The thyroid in pregnancy. Med Clin North Am [Internet]. 1975;59(5):1089–98. Available from: http://dx.doi.org/10.1016/s0025-7125(16)31959-9

28. Turnbridge WMG, Hall R. Thyroid function in pregnancy. Clinics in Obstetrics and Gynecology. 1975;2(2).

29. Gómez JM, Maravall FJ, Gómez N, Gumà A, Soler J. Determinants of thyroid volume as measured by ultrasonography in healthy adults randomly selected. Clin Endocrinol (Oxf) [Internet]. 2000;53(5):629–34. Available from: http://dx.doi.org/10.1111/j.1365-2265.2000.01138.x

30. F. Gary Cunningham Kenneth J. Leveno Jodi S. Dashe Barbara L Hoffman Catherine Y. Spong Brian M. Casey. Maternal Physiology. In: Williams OBSTETRICS. New York, NY: McGraw-Hill; 2022.

31. Springer D, Zima T, Limanova Z. Reference intervals in evaluation of maternal thyroid function during the first trimester of pregnancy. Eur J Endocrinol [Internet]. 2009;160(5):791–7. Available from: http://dx.doi.org/10.1530/EJE-08-0890

32. Glinoer D, De Nayer P, Robyn C, Lejeune B, Kinthaert J, Meuris S. Serum levels of intact human chorionic gonadotropin (HCG) and its free alpha and beta subunits, in relation to maternal thyroid stimulation during normal pregnancy. J Endocrinol Invest [Internet]. 1993;16(11):881–8. Available from: http://dx.doi.org/10.1007/bf03348950

33. Fister P, Gaberscek S, Zaletel K, Krhin B, Hojker S, Gersak K. Thyroid function in the third trimester of pregnancy and after delivery in an area of adequate iodine intake. Int J Gynaecol Obstet [Internet]. 2011;112(1):52–5. Available from: http://dx.doi.org/10.1016/j.ijgo.2010.07.029

34. Lockwood CM, Grenache DG, Gronowski AM. Serum human chorionic gonadotropin concentrations greater than 400,000 IU/L are invariably associated with suppressed serum thyrotropin concentrations. Thyroid [Internet]. 2009;19(8):863–8. Available from: http://dx.doi.org/10.1089/thy.2009.0079

35. Shields B, Hill A, Bilous M, Knight B, Hattersley AT, Bilous RW, et al. Cigarette smoking during pregnancy is associated with alterations in maternal and fetal thyroid function. J Clin Endocrinol Metab [Internet]. 2009;94(2):570–4. Available from: http://dx.doi.org/10.1210/jc.2008-0380

36. Aboul -Khair SA, Crooks J, Turnbull AC, Hytten FE. The physiological changes in thyroid function during pregnancy. Clinical Science. 1964;

37. Abalovich M, Amino N, Barbour LA, Cobin RH, De Groot LJ, Glinoer D, et al. Management of thyroid dysfunction during pregnancy and postpartum: an Endocrine Society Clinical Practice Guideline. J Clin Endocrinol Metab [Internet]. 2007;92(8 Suppl):S1-47. Available from: http://dx.doi.org/10.1210/jc.2007-0141

38. Taylor PN, Lazarus JH. Hypothyroidism in pregnancy. Endocrinol Metab Clin North Am [Internet]. 2019;48(3):547–56. Available from: http://dx.doi.org/10.1016/j.ecl.2019.05.010

39. Accessmedicine.mhm-. [cited 2022 Nov 24]. Available from: https://accessmedicine.mhm-

40. Melmed S, Koenig R, Rosen C, Auchus R, Goldfine A. Williams textbook of endocrinology, 14 edition: South Asia edition, 2 vol set - E-book. 14th ed. New Delhi, India: Elsevier; 2020.

41. Karbownik-Lewińska M, Stępniak J, Lewiński A. Potential risk factors for isolated hypothyroxinemia in women of childbearing age-results from retrospective analysis. J Clin Med [Internet]. 2021;10(22):5384. Available from: http://dx.doi.org/10.3390/jcm10225384

42. Melmed S, Richard J, Allison B, Goldfine RJ, Koeing CJ. Williams Textbook of Endocrinology. 1.

43. Andersen SL, Olsen J, Laurberg P. Maternal thyroid disease in the Danish National Birth Cohort: prevalence and risk factors. Eur J Endocrinol [Internet]. 2016;174(2):203–12. Available from: http://dx.doi.org/10.1530/EJE-15-0816

44. Medici M, Korevaar TIM, Visser WE, Visser TJ, Peeters RP. Thyroid function in pregnancy: what is normal? Clin Chem [Internet]. 2015;61(5):704–13. Available from: http://dx.doi.org/10.1373/clinchem.2014.236646

45. Krassas GE, Poppe K, Glinoer D. Thyroid function and human reproductive health. Endocr Rev [Internet]. 2010;31(5):702–55. Available from: http://dx.doi.org/10.1210/er.2009-0041

46. Van Den Boogaard E, Vissenberg R, Land JA. significance of (sub)clinical thyroid dysfunction and thyroid autoimmunity before conception and in early pregnancy: a systematic review. Hum Reprod Update. 2011;17(5):605–19.

47. Leung AS, Millar LK, Koonings PP, Montoro M, Mestman JH. Perinatal outcome in hypothyroid pregnancies. Obstet Gynecol. 1993;81(3):349–53.

48. Reid SM, Middleton P, Cossich MC, Crowther CA. Interventions for clinical and subclinical hypothyroidism in pregnancy. Cochrane Database Syst Rev [Internet]. 2010;(7):CD007752. Available from: http://dx.doi.org/10.1002/14651858.CD007752.pub2

49. Casey BM, Dashe JS, Wells CE, McIntire DD, Byrd W, Leveno KJ, et al. Subclinical hypothyroidism and pregnancy outcomes. Obstet Gynecol [Internet]. 2005;105(2):239–45. Available from: http://dx.doi.org/10.1097/01.AOG.0000152345.99421.22

50. Negro R, Schwartz A, Gismondi R, Tinelli A, Mangieri T, Stagnaro-Green A. Increased pregnancy loss rate in thyroid antibody negative women with TSH levels between 2.5 and 5.0 in the first trimester of pregnancy. J Clin Endocrinol Metab [Internet]. 2010;95(9):E44-8. Available from: http://dx.doi.org/10.1210/jc.2010-0340

51. Su P-Y, Huang K, Hao J-H, Xu Y-Q, Yan S-Q, Li T, et al. Maternal thyroid function in the first twenty weeks of pregnancy and subsequent fetal and infant development: a prospective population-based cohort study in China. J Clin Endocrinol Metab [Internet]. 2011;96(10):3234–41. Available from: http://dx.doi.org/10.1210/jc.2011-0274

52. Korevaar TIM, Schalekamp-Timmermans S, de Rijke YB, Visser WE, Visser W, de Muinck Keizer-Schrama SMPF, et al. Hypothyroxinemia and TPO-antibody positivity are risk factors for premature delivery: the generation R study. J Clin Endocrinol Metab [Internet]. 2013;98(11):4382–90. Available from: http://dx.doi.org/10.1210/jc.2013-2855

53. Tudela CM, Casey BM, McIntire DD, Cunningham FG. Relationship of subclinical thyroid disease to the incidence of gestational diabetes. Obstet Gynecol [Internet]. 2012;119(5):983–8. Available from: http://dx.doi.org/10.1097/AOG.0b013e318250aeeb

54. Liu H, Shan Z, Li C, Mao J, Xie X, Wang W, et al. Maternal subclinical hypothyroidism, thyroid autoimmunity, and the risk of miscarriage: a prospective cohort study. Thyroid [Internet]. 2014;24(11):1642–9. Available from: http://dx.doi.org/10.1089/thy.2014.0029

55. Wang S, Teng WP, Li JX, Wang WW, Shan ZY. Effects of maternal subclinical hypothyroidism on obstetrical outcomes during early pregnancy. J Endocrinol Invest [Internet]. 2012;35(3):322–5. Available from: http://dx.doi.org/10.3275/7772

56. Casey BM, Dashe JS, Spong CY, McIntire DD, Leveno KJ, Cunningham GF. Perinatal significance of isolated maternal hypothyroxinemia identified in the first half of pregnancy. Obstet Gynecol [Internet]. 2007;109(5):1129–35. Available from: http://dx.doi.org/10.1097/01.AOG.0000262054.03531.24

57. Feldthusen A-D, Larsen J, Pedersen PL, Toft Kristensen T, Kvetny J. Pregnancy-induced alterations in mitochondrial function in euthyroid pregnant women and pregnant women with subclinical hypothyroidism; relation to adverse outcome. J Clin Transl Endocrinol [Internet]. 2014;1(1):e13–7. Available from: http://dx.doi.org/10.1016/j.jcte.2013.12.003

58. Chen L-M, Du W-J, Dai J, Zhang Q, Si G-X, Yang H, et al. Effects of subclinical hypothyroidism on maternal and perinatal outcomes during pregnancy: a single-center cohort study of a Chinese population. PLoS One [Internet]. 2014;9(10):e109364. Available from: http://dx.doi.org/10.1371/journal.pone.0109364

59. Wilson KL, Casey BM, McIntire DD, Halvorson LM, Cunningham FG. Subclinical thyroid disease and the incidence of hypertension in pregnancy. Obstet Gynecol [Internet]. 2012;119(2 Pt 1):315–20. Available from: http://dx.doi.org/10.1097/AOG.0b013e318240de6a

60. Stagnaro-Green A, Chen X, Bogden JD, Davies TF, Scholl TO. The thyroid and pregnancy: a novel risk factor for very preterm delivery. Thyroid [Internet]. 2005;15(4):351–7. Available from: http://dx.doi.org/10.1089/thy.2005.15.351

61. Kattah A, Garovic VD. Subclinical hypothyroidism and gestational hypertension: causal or coincidence? J Am Soc Hypertens [Internet]. 2016;10(9):688–90. Available from: http://dx.doi.org/10.1016/j.jash.2016.06.031

62. S. S, Nadagoudar S, Devi L. A. The study of maternal and fetal outcome in pregnant women with thyroid disorders. Int J Reprod Contracept Obstet Gynecol [Internet]. 2017;6(8):3507. Available from: http://dx.doi.org/10.18203/2320-1770.ijrcog20173473

63. Negro R, Schwartz A, Gismondi R, Tinelli A, Mangieri T, Stagnaro-Green A. Universal screening versus case finding for detection and treatment of thyroid hormonal dysfunction during pregnancy. J Clin Endocrinol Metab [Internet]. 2010;95(4):1699–707. Available from: http://dx.doi.org/10.1210/jc.2009-2009

64. Hollowell JG, Staehling NW, Flanders WD, Hannon WH, Gunter EW, Spencer CA, et al. Serum TSH, T(4), and thyroid antibodies in the United States population (1988 to 1994): National Health and Nutrition Examination Survey (NHANES III). J Clin Endocrinol Metab [Internet]. 2002;87(2):489–99. Available from: http://dx.doi.org/10.1210/jcem.87.2.8182

65. Kuijpens JL, Pop VJ, Vader HL, Drexhage HA, Wiersinga WM. Prediction of post partum thyroid dysfunction: can it be improved? Eur J Endocrinol [Internet]. 1998;139(1):36–43. Available from: http://dx.doi.org/10.1530/eje.0.1390036

66. Gaberšček S, Zaletel K. Thyroid physiology and autoimmunity in pregnancy and after delivery. Expert Rev Clin Immunol [Internet]. 2011;7(5):697–706; quiz 707. Available from: http://dx.doi.org/10.1586/eci.11.42

67. Nicholson WK, Robinson KA, Smallridge RC, Ladenson PW, Powe NR. Prevalence of postpartum thyroid dysfunction: a quantitative review. Thyroid [Internet]. 2006;16(6):573–82. Available from: http://dx.doi.org/10.1089/thy.2006.16.573

68. Stagnaro-Green A, Schwartz A, Gismondi R, Tinelli A, Mangieri T, Negro R. High rate of persistent hypothyroidism in a large-scale prospective study of postpartum thyroiditis in southern Italy. J Clin Endocrinol Metab [Internet]. 2011;96(3):652–7. Available from: http://dx.doi.org/10.1210/jc.2010-1980

69. Jameson JL, Mandel SJ, Kasper DL, Fauci AS, Hauser SL. Weetman AP; disorders of thyroid gland. In: harrison's principle of internal medicine. MCGraw-Hill Education; 2015.

70. Sarkhail P, Mehran L, Askari S, Tahmasebinejad Z, Tohidi M, Azizi F. Maternal thyroid function and autoimmunity in 3 trimesters of pregnancy and their offspring's thyroid function. Horm Metab Res [Internet]. 2016;48(1):20–6. Available from: http://dx.doi.org/10.1055/s-0035-1555878

71. Pratt D, Novotny M, Kaberlein G, Dudkiewicz A, Gleicher N. Antithyroid antibodies and the association with non-organ-specific antibodies in recurrent pregnancy loss. Am J Obstet Gynecol [Internet]. 1993;168(3 Pt 1):837–41. Available from: http://dx.doi.org/10.1016/s0002-9378(12)90830-3

72. Stagnaro-Green A, Roman SH, Cobin RH, el-Harazy E, Alvarez-Marfany M, Davies TF. Detection of at-risk pregnancy by means of highly sensitive assays for thyroid autoantibodies. JAMA [Internet]. 1990;264(11):1422–5. Available from: http://dx.doi.org/10.1001/jama.1990.03450110068029

73. Stagnaro-Green A, Roman SH, Cobin RH, El-Harazy E, Wallenstein S, Davies TF. A prospective study of lymphocyte-initiated immuno-suppression in normal pregnancy: evidence of a T-cell etiology for post partum thyroid dysfunction. J Clin Endocrinol Metab. 1992;74:645–53.

74. Mecacci F, Parretti E, Cioni R, Lucchetti R, Magrini A, La Torre P, et al. Thyroid autoimmunity and its association with non-organ-specific antibodies and subclinical alterations of thyroid function in women with a history of pregnancy loss or preeclampsia. J Reprod Immunol [Internet]. 2000;46(1):39–50. Available from: http://dx.doi.org/10.1016/s0165-0378(99)00055-8

75. Abbassi-Ghanavati M, Casey BM, Spong CY, McIntire DD, Halvorson LM, Cunningham FG. Pregnancy outcomes in women with thyroid peroxidase antibodies. Obstet Gynecol [Internet]. 2010;116(2 Pt 1):381–6. Available from: http://dx.doi.org/10.1097/AOG.0b013e3181e904e5

76. Andersen SL, Andersen S, Vestergaard P, Olsen J. Maternal thyroid function in early pregnancy and child neurodevelopmental disorders: A danish nationwide case-cohort study. Thyroid [Internet]. 2018;28(4):537–46. Available from: http://dx.doi.org/10.1089/thy.2017.0425

77. Shimizu Y, Kawashiri S-Y, Noguchi Y, Nagata Y, Maeda T, Hayashida N. Anti-thyroid peroxidase antibody and subclinical hypothyroidism in relation to hypertension and thyroid cysts. PLoS One [Internet]. 2020;15(10):e0240198. Available from: http://dx.doi.org/10.1371/journal.pone.0240198

78. Matsua K, Kaberlein G, Burrow G. Spontaneous pregnancy termination and thyroid abnormalities. Hum Reprod. 2000;15:163–79.

79. Bussen S, Steck T. Thyroid autoantibodies in euthyroid non-pregnant women with recurrent spontaneous abortions. Hum Reprod [Internet]. 1995;10(11):2938–40. Available from: http://dx.doi.org/10.1093/oxfordjournals.humrep.a135823

80. Bernal J, Pekonen F. Ontogenesis of the nuclear 3,5,3'-triiodothyronine receptor in the human fetal brain. Endocrinology [Internet]. 1984;114(2):677–9. Available from: http://dx.doi.org/10.1210/endo-114-2-677

81. Thorpe-Beeston JG, Nicolaides KH, Felton CV, Butler J, McGregor AM. Maturation of the secretion of thyroid hormone and thyroid-stimulating hormone in the fetus. N Engl J Med [Internet]. 1991;324(8):532–6. Available from: http://dx.doi.org/10.1056/NEJM199102213240805

82. Thorpe-Beeston JG, Nicolaides KH, McGregor AM. Fetal thyroid function. Thyroid [Internet]. 1992 Autumn;2(3):207–17. Available from: http://dx.doi.org/10.1089/thy.1992.2.207

83. Burrow GN, Fisher DA, Larsen PR. Maternal and fetal thyroid function. N Engl J Med [Internet]. 1994;331(16):1072–8. Available from: http://dx.doi.org/10.1056/NEJM199410203311608

84. Brown RS. Minireview: developmental regulation of thyrotropin receptor gene expression in the fetal and newborn thyroid. Endocrinology [Internet]. 2004;145(9):4058–61. Available from: http://dx.doi.org/10.1210/en.2004-0458

85. Ferreiro B, Bernal J, Goodyer CG, Branchard CL. Estimation of nuclear thyroid hormone receptor saturation in human fetal brain and lung during early gestation. J Clin Endocrinol Metab [Internet]. 1988;67(4):853–6. Available from: http://dx.doi.org/10.1210/jcem-67-4-853

86. Wu S-Y, Green WL, Huang W-S, Hays MT, Chopra IJ. Alternate pathways of thyroid hormone metabolism. Thyroid [Internet]. 2005;15(8):943–58. Available from: http://dx.doi.org/10.1089/thy.2005.15.943

87. Ballabio M, Nicolini U, Jowett T, De Elvira R, Ekins MC. Maturation of thyroid function in normal human fetuses. Clin Endocrinol (Oxf). 31:565–71.

88. Patel J, Landers K, Li H, Mortimer RH, Richard K. Delivery of maternal thyroid hormones to the fetus. Trends Endocrinol Metab [Internet]. 2011;22(5):164–70. Available from: http://dx.doi.org/10.1016/j.tem.2011.02.002

89. Vulsma T, Gons MH, de Vijlder JJ. Maternal-fetal transfer of thyroxine in congenital hypothyroidism due to a total organification defect or thyroid agenesis. N Engl J Med [Internet]. 1989;321(1):13–6. Available from: http://dx.doi.org/10.1056/NEJM198907063210103

90. Ford G, LaFranchi SH. Screening for congenital hypothyroidism: a worldwide view of strategies. Best Pract Res Clin Endocrinol Metab [Internet]. 2014;28(2):175–87. Available from: http://dx.doi.org/10.1016/j.beem.2013.05.008

91. American Academy of Pediatrics, Rose SR, Section on Endocrinology and Committee on Genetics, American Thyroid Association, Brown RS, Public Health Committee, Lawson Wilkins Pediatric Endocrine Society, Foley T, et al. Update of newborn screening and therapy for congenital hypothyroidism. Pediatrics [Internet]. 2006;117(6):2290–303. Available from: http://dx.doi.org/10.1542/peds.2006-0915

92. Léger J, Olivieri A, Donaldson M, Torresani T, Krude H, van Vliet G, et al. European Society for Paediatric Endocrinology consensus guidelines on screening, diagnosis, and management of congenital hypothyroidism. J Clin Endocrinol Metab [Internet]. 2014;99(2):363–84. Available from: http://dx.doi.org/10.1210/jc.2013-1891

93. American College of Obstetricians and Gynecologists' Committee on Practice Bulletins-Obstetrics. Thyroid disease in pregnancy: ACOG Practice Bulletin, number 223. Obstet Gynecol [Internet]. 2020;135(6):e261–74. Available from: http://dx.doi.org/10.1097/AOG.0000000000003893

94. Korevaar TIM, Muetzel R, Medici M, Chaker L, Jaddoe VWV, de Rijke YB, et al. Association of maternal thyroid function during early pregnancy with offspring IQ and brain morphology in childhood: a population-based prospective cohort study. Lancet Diabetes Endocrinol [Internet]. 2016;4(1):35–43. Available from: http://dx.doi.org/10.1016/S2213-8587(15)00327-7

95. Bernal J. Thyroid hormone receptors in brain development and function. Nat Clin Pract Endocrinol Metab [Internet]. 2007;3(3):249–59. Available from: http://dx.doi.org/10.1038/ncpendmet0424

96. Thorpe-Beeston JG, Nicolaides KH, Snijders RJ, Felton CV, McGregor AM. Thyroid function in small for gestational age fetuses. Obstet Gynecol. 1991;77(5):701–6.

97. Morreale de Escobar G, Obregon MJ, Escobar del Rey F. Role of thyroid hormone during early brain development. Eur J Endocrinol [Internet]. 2004;151 Suppl 3:U25-37. Available from: http://dx.doi.org/10.1530/eje.0.151u025

98. Jansen TA, Korevaar TIM, Mulder TA, White T, Muetzel RL, Peeters RP, et al. Maternal thyroid function during pregnancy and child brain morphology: a time window-specific analysis of a prospective cohort. Lancet Diabetes Endocrinol [Internet]. 2019;7(8):629–37. Available from: http://dx.doi.org/10.1016/S2213-8587(19)30153-6

99. Schroeder BM, American College of Obstetricians and Gynecologists. ACOG practice bulletin on thyroid disease in pregnancy. Am Fam Physician. 2002;65(10):2158, 2161–2.

100. Ohara N, Tsujino T, Mauro T. The role of thyroid hormone in trophoblast function, early pregnancy maintainence and fetal neurodevelopment. J Obstet Gynaecol Can. 2004;26:982–90.

101. Idris I, Srinivasan R, Simm A, Page RC. Maternal hypothyroidism in early and late gestation: effects on neonatal and obstetric outcome. Clin Endocrinol (Oxf) [Internet]. 2005;63(5):560–5. Available from: http://dx.doi.org/10.1111/j.1365-2265.2005.02382.x

102. Sahu MT, Das V, Mittal S, Agarwal A, Sahu M. Overt and subclinical thyroid dysfunction among Indian pregnant women and its effect on maternal and fetal outcome. Arch Gynecol Obstet [Internet]. 2010;281(2):215–20. Available from: http://dx.doi.org/10.1007/s00404-009-1105-1

103. Hareesh MV, Bijju A, Steephan S. The profile of infants born to mothers with subclinical hypothyroidism in the tertiary care center. IOSR-JDMS. 2015;14(11):42–6.

104. Hou J, Yu P, Zhu H, Pan H, Li N, Yang H, et al. The impact of maternal hypothyroidism during pregnancy on neonatal outcomes: a systematic review and meta-analysis. Gynecol Endocrinol [Internet]. 2016;32(1):9–13. Available from: http://dx.doi.org/10.3109/09513590.2015.1104296

105. Stagnaro-Green A, Abalovich M, Alexander E, Azizi F, Mestman J, Negro R, et al. Guidelines of the American Thyroid Association for the diagnosis and management of thyroid disease during pregnancy and postpartum. Thyroid [Internet]. 2011;21(10):1081–125. Available from: http://dx.doi.org/10.1089/thy.2011.0087

106. Alexander EK, Pearce EN, Brent GA, Brown RS, Chen H, Dosiou C, et al. 2017 guidelines of the American Thyroid Association for the diagnosis and management of thyroid disease during pregnancy and the postpartum. Thyroid [Internet]. 2017;27(3):315–89. Available from: http://dx.doi.org/10.1089/thy.2016.0457

107. Alexander EK, Marqusee E, Lawrence J, Jarolim P, Fischer GA, Larsen PR. Timing and magnitude of increases in levothyroxine requirements during pregnancy in women with hypothyroidism. N Engl J Med [Internet]. 2004;351(3):241–9. Available from: http://dx.doi.org/10.1056/NEJMoa040079

108. Stagnaro-Green A. Approach to the patient with postpartum thyroiditis. J Clin Endocrinol Metab [Internet]. 2012;97(2):334–42. Available from: http://dx.doi.org/10.1210/jc.2011-2576

109. Wang R, Nelson JC, Weiss RM, Wilcox RB. Accuracy of free thyroxine measurements across natural ranges of thyroxine binding to serum proteins. Thyroid [Internet]. 2000;10(1):31–9. Available from: http://dx.doi.org/10.1089/thy.2000.10.31

110. Hollowell JG. Serum TSH, T4, and thyroid antibodies in the United States population (1988 to 1994): National health and nutrition examination survey (NHANES III). J Clin Endocrinol Metab [Internet]. 2002;87(2):489–99. Available from: http://dx.doi.org/10.1210/jc.87.2.489

111. LaFranchi SH. Approach to the diagnosis and treatment of neonatal hypothyroidism. J Clin Endocrinol Metab [Internet]. 2011;96(10):2959–67. Available from: http://dx.doi.org/10.1210/jc.2011-1175

112. Gleason CA, Sandra E. s diseases of the newborn. China: Elsevier; 2018.

113. Robert Kliegman JSG. Nelson TEXTBOOK OF PEDIATRICS. Philadelphia, PA: Elsevier - Health Sciences Division; 2019.

114. Teng W, Shan Z, Patil-Sisodia K, Cooper DS. Hypothyroidism in pregnancy. Lancet Diabetes Endocrinol [Internet]. 2013;1(3):228–37. Available from: http://dx.doi.org/10.1016/S2213-8587(13)70109-8

115. Männistö T, Vääräsmäki M, Pouta A, Hartikainen A-L, Ruokonen A, Surcel H-M, et al. Thyroid dysfunction and autoantibodies during pregnancy as predictive factors of pregnancy complications and maternal morbidity in later life. J Clin Endocrinol Metab [Internet]. 2010;95(3):1084–94. Available from: http://dx.doi.org/10.1210/jc.2009-1904

116. Stagnaro-Green A. Overt hyperthyroidism and hypothyroidism during pregnancy. Clin Obstet Gynecol [Internet]. 2011;54(3):478–87. Available from: http://dx.doi.org/10.1097/GRF.0b013e3182272f32

117. Casey BM, Dashe JS, Wells CE, McIntire D, Leveno KJ, Cunningham FG. Subclinical hypothyroidism and pregnancy outcomes. Obstet Gynecol [Internet]. 2005;106(1):198–9. Available from: http://dx.doi.org/10.1097/01.aog.0000169597.61122.be

118. Leung AS, Millar LK, Kooning PP, Mestman J. Perinatal outcomes in hypothyroid pregnancies. Obstet Gynecol. 1993;81(3):349–53.

119. Vaidya B, Bilousm AS. Detection of Thyroid dysfunction in early pregnancy. Universal screening or high risk targeted case finding ? J Clin Endocronol Metab. 2007;92(1):203–7.

120. Pregnancy outcomes in women with thyroid peroxidase antibodies. Obstet Gynecol. 2010;116(2):381–6.

121. Haddow JE, McClain MR, Palomaki GE, Neveux LM, Lambert-Messerlian G, Canick JA, et al. Thyroperoxidase and thyroglobulin antibodies in early pregnancy and placental abruption. Obstet Gynecol [Internet]. 2011;117(2 Pt 1):287–92. Available from: http://dx.doi.org/10.1097/AOG.0b013e31820513d9

122. He X, Wang P, Wang Z, He X, Xu D, Wang B. Thyroid antibodies and risk of preterm delivery: a meta-analysis of prospective cohort studies. Eur J Endocrinol [Internet]. 2012;167(4):455–64. Available from: http://dx.doi.org/10.1530/EJE-12-0379

123. Thangaratinam S, Tan A, Knox E, Kilby MD, Franklyn J, Coomarasamy A. Association between thyroid autoantibodies and miscarriage and preterm birth: meta-analysis of evidence. BMJ [Internet]. 2011;342(may09 1):d2616. Available from: http://dx.doi.org/10.1136/bmj.d2616

124. Chen L-M, Zhang Q, Si G-X, Chen Q-S, Ye E-L, Yu L-C, et al. Associations between thyroid autoantibody status and abnormal pregnancy outcomes in euthyroid women. Endocrine [Internet]. 2015;48(3):924–8. Available from: http://dx.doi.org/10.1007/s12020-014-0420-x

ANNEXURE I

PROFORMA

Case No:	**IP No. :**
Name :	**PHONE NO :**
Age :	
ADDRESS :	

A. OBSTETRIC HISTORY

Obstetric Score- Months of amenorrhoea-

B. MENSTRUAL HISTORY

POG by dates:

POG by 1st-trimester scan

C. GENERAL PHYSICAL EXAMINATION

Pallor: Pulse:

Icterus: B.P:

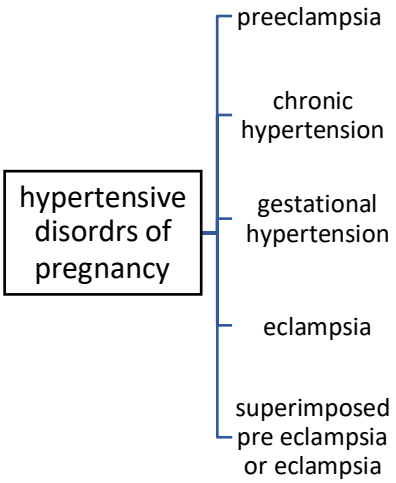
Oedema : BMI – weight in kg/(height in metres)^2

1. PERSONAL HISTORY: IS SHE K/C/O HYPOTHYROIDISM?

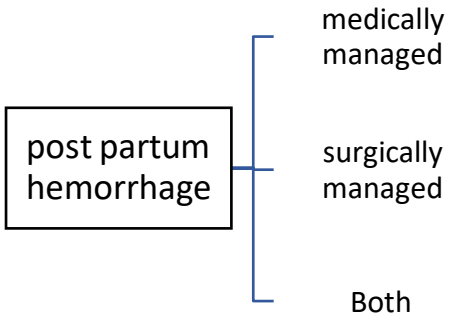
1. YES ☐
2. NO ☐

2. ADVERSE OUTCOMES

- ○



- ABRUPTIO PLACENTA
-



- PRETERM DELIVERIES
- ANEMIA (HB<11g/dl)
- INCIDENCE OF CAESAREAN SECTION
- GESTATIONAL DIABETES MELLITUS
- OLIGOHYDROMNIOS
- ANY OTHERS(SPECIFY)

3. INVESTIGATIONS

Thyroid Hormone profile

1. TSH

If TSH is abnormal these investigations will be Performed:

2. FREE T4
3. TPO ANTIBODIES

CBC

- Hb
- MCV
- MCH
- MCHC
- PLT
- WBC

BABY PROFORMA

- BIRTH WEIGHT
- APGAR SCORE AT 1 MINUTE
- TIME OF PASSAGE OFMECONIUM AFTER BIRTH
- PRESENCE OF ICTERUS /JAUNDICE
- PHYSICAL APPEARANCE (COARSE FACIES)
- COARSE CRY
- UMBILICAL HERNIA
- LARGE FONTANELLE

ADVERSE PERINATAL OUTCOMES

- FETAL GROWTH RESTRICTION
- INTRAUTERINE DEATH
- LOW BIRTH WEIGHT
- LOW APGAR SCORE
- NEONATAL HYPERBILIRUBINEMIA
- SEPSIS
- EARLY NEONATAL DEATH
- ANY OTHERS(SPECIFY)

INVESTIGATIONS

- *TSH*

If clinically icterus is present then, this will be performed:

- *BILIRUBIN*

ANNEXURE II

INFORMED CONSENT FOR PARTICIPATION IN DISSERTATION/RESEARCH

I, the undersigned,_____, S/O D/O W/O_____, aged___years, ordinarily resident of_____do hereby state/declare that Dr. GAURI BANKAPUR of Shri. B. M. Patil Medical College Hospital and Research Centre have examined me thoroughly on _____ at _____ (place) Further DR GAURI BANKAPUR has informed me that he/she is conducting dissertation/research titled "IMPACT OF PREEXISTING AND NEWLY DETECTED MATERNAL HYPOTHYROIDISM ON MATERNAL AND PERINATAL OUTCOME DURING LATE PREGNANCY AN OBSERVATIONAL STUDY" under the guidance of DR RAJASRI G YALIWAL. According to this my blood sample will be taken to assess my thyroid function and I will be monitored for any fetal or maternal adverse events. Further Doctor has informed me that my participation in this study will help to get useful information that can help in the future treatment of such similar cases.

The Doctor has also informed me that information given by me, observations made/ photographs/ video graphs taken upon me by the investigator will be kept secret and not assessed by the person other than me or my legal hirer except for academic purposes.

The Doctor did inform me that though my participation is purely voluntary, based on the information given by me, I can ask for any clarification during treatment/study related to diagnosis, the procedure of treatment, result of treatment, or prognosis. At the same time, I have been informed that I can withdraw from my participation in this study at any time if I want or the investigator can terminate me from the study at any time study but not the procedure of treatment and follow-up unless I request to be discharged.

The doctor did inform me that though my baby's participation is purely voluntary and also, I can ask for any clarification during treatment/study related to diagnosis, the procedure of treatment, result of treatment, or prognosis. At the same time, I have been informed that I can withdraw the consent for my baby's participation in this study at any time if I want or the investigator can terminate me from the study at any time but not the procedure of treatment and follow-up unless I request to be discharged

After understanding the nature of dissertation or research, diagnosis made, mode of treatment. I am giving consent for the blood investigations and also for the follow-up.

I the undersigned Shri/Smt_____under my full conscious state of mind agree to participate in the said research/dissertation and also agree to my baby's participation in this said research/dissertation

Signature of patient:

Signature of doctor:

Witness: 1.

Date:

Place:

ANNEXURE III

ETHICAL COMMITTIEE CLEARANCE

B.L.D.E. (DEEMED TO BE UNIVERSITY) TEC/NO-09/2021
(Declared vide notification No. F.9-37/2007-U.3 (A) Dated. 29-2-2008 of the MHRD, Government of India under Section 3 of the UGC Act, 1956) Date-22/01/2021
The Constituent College
SHRI. B. M. PATIL MEDICAL COLLEGE, HOSPITAL AND RESEARCH CENTRE

INSTITUTIONAL ETHICAL CLEARANCE CERTIFICATE

The Institutional ethical committee of this college met on 11-01-2021 at 11-00 am to scrutinize the synopsis of Postgraduate students of this college from Ethical Clearance point of view. After scrutiny the following original/corrected and revised version synopsis of the Thesis has been accorded Ethical Clearance

Title: Impact of preexisting & newly detected maternal hypothyroidism on maternal & perinatal outcome during late pregnancy an observational study.

Name of PG student: Dr Gauri Bankapur, Department of Obst/Gynaec

Name of Guide/Co-investigator: Dr Rajasri.G.Yaliwal, Associate Professor of Obst/Gynaec

DR .S.V.PATIL
CHAIRMAN, IEC
Institutional Ethical Committee
B L D E (Deemed to be University)
Shri B.M. Patil Medical College,
VIJAYAPUR-586103 (Karnataka)

Following documents were placed before Ethical Committee for Scrutinization:

1. Copy of Synopsis / Research project
2. Copy of informed consent form
3. Any other relevant documents.

5

ANNEXURE IV

MASTER CHART

age	address	obstetric score	Period of gestation	K/C/O hypothyroidism	hypertensive disorders of pregnancy	post partum hemorrhage	abruptio placenta	preterm delivery	anemia	incidence of C- Section	gestational DM	oligohydromnios	any others, specify	hemoglobin	MCV	PLATELETS	TSH	free T4	not done	Which type of hypothyroidism	birth weight	APGAR score at 1	fetal growth restriction	intrauterine death	low birth weight	low APGAR score	neonatal hyperbilirubinemia	neonatal sepsis	early neonatal death	specify, if others	baby TSH
24	Indi	multigravida	40	no	PE with severe features	None	no	no	no	no	no	no	none	11.7	78.7	2.21	2.3	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
30	Indi	primigravida	37	no	PE with severe features	None	no	no	yes	no	no	no	none	6.9	85.4	1.9	1.93	not done	not done	No hypothyroidism	1500-2000 gms	7	yes	no	yes	no	no	no	no	none	not done
25	Vijayapura	multigravida	42	no	none	None	no	no	no	no	no	no	Rh negative status	13.1	85.3	2.57	2.1	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
27	Vijayapura	multigravida	32	no	imminent eclampsia	None	no	yes	no	yes	no	yes	none	13	83.2	2.04	1.6	not done	not done	No hypothyroidism	1000-1500 gms	7	no	no	yes	no	no	no	no	none	not done
24	Sindagi	primigravida	29	no	imminent eclampsia	None	no	yes	yes	no	no	no	none	10	89.6	1.51	1.4	not done	not done	No hypothyroidism	500-1000gms	3	no	no	yes	yes	no	no	yes	none	not done
20	Vijayapura	multigravida	40	no	none	None	no	no	no	yes	no	no	none	12.8	90.2	2.4	2.3	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
22	Sindagi	multigravida	41	no	PE with severe features	None	no	yes	yes	yes	no	no	none	8.5	69.5	1.96	1.7	not done	not done	No hypothyroidism	2000-2500 gms	7	no	no	yes	no	no	no	no	RDS	not done
27	Vijayapura	multigravida	35	no	none	None	no	yes	yes	no	no	no	none	9.1	79.3	1.71	1.154	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	RDS	not done
22	Vijayapura	multigravida	44	no	none	None	no	no	yes	no	no	no	none	8.4	105.4	2.52	2.75	not done	not done	No hypothyroidism	2000-2500 gms	5	yes	no	yes	yes	no	no	yes	none	not done
25	Babaleshwara	primigravida	39	no	None	None	no	no	no	no	no	yes	none	11.2	84.7	2.45	1.781	not done	not done	No hypothyroidism	more than 3000 gms	8	no	yes	no	no	no	no	no	none	not done
31	Bijapur	multigravida	39	no	None	None	yes	no	no	no	no	no	none	11.9	92.8	2	1.7	not done	not done	No hypothyroidism	2500-3000 gms	8	no	no	no	no	no	no	no	none	not done
24	Bijapur	primigravida	39	no	None	None	no	no	yes	no	no	no	none	10.5	80.5	1.8	2.29	not done	not done	No hypothyroidism	2000-2500 gms	7	no	no	no	no	no	no	no	none	not done
30	Bijapur	multigravida	40	no	None	None	no	no	yes	yes	no	no	none	9.9	89	2.12	1.02	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
19	Jamkandi	primigravida	29	no	None	None	no	yes	yes	yes	no	yes	none	9.1	84.2	3.03	1.9	not done	not done	No hypothyroidism	1000-1500 gms	4	no	no	yes	yes	no	no	yes	none	not done
30	Itagi	multigravida	40	no	None	None	no	no	yes	yes	no	no	none	8.6	81.5	1.65	1.919	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	yes	no	no	none	not done
28	Bijapur	multigravida	39	no	None	None	no	no	no	no	no	no	none	11	79.4	2.3	2.453	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
23	Tadavalaga	multigravida	38	no	None	both	no	no	yes	yes	no	no	none	10.3	108.8	1.68	2.9	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
27	Bijapur	multigravida	39	no	None	None	no	no	no	no	no	yes	none	13.7	86.9	1.88	2.02	not done	not done	No hypothyroidism	2000-2500 gms	7	no	no	no	no	no	no	no	none	not done
20	Bijapur	primigravida	39	no	None	None	no	no	yes	no	no	no	Gestational thrombocytopenia	9.1	73	1.1	2.67	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
32	Indi	multigravida	36	no	None	None	no	yes	no	no	no	no	none	13.2	89.2	1.99	2.171	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	yes	no	no	none	not done
26	Bijapur	primigravida	40	no	None	None	no	no	no	no	no	no	none	14.5	92.4	1.51	1.921	not done	not done	No hypothyroidism	2000-2500 gms	7	yes	no	yes	no	no	no	no	none	not done
32	Bijapur	primigravida	38	no	None	None	no	no	yes	no	no	no	none	7.9	77.8	1.01	1.3	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
20	Indi	primigravida	38	no	None	None	yes	no	no	no	no	yes	none	13	90	2.5	1.6	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	yes	no	no	none	not done
24	Bijapur	multigravida	37	no	None	None	no	no	no	yes	no	yes	none	12	87	2.62	2.3	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	yes	no	no	none	not done
26	Bijapur	multigravida	39	no	None	None	no	no	no	yes	yes	no	none	12.2	89	2.62	2.6	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
21	Indi	multigravida	39	no	gestational hypertension	None	no	no	yes	yes	no	no	none	10.2	72.3	1.67	2.113	not done	not done	No hypothyroidism	2500-3000 gms	6	no	no	no	no	no	no	no	none	not done
24	Bijapur	multigravida	40	no	None	None	no	no	yes	no	no	no	none	10.5	79.5	2.09	1.67	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	yes	no	no	none	not done
30	Gulbarga	multigravida	39	no	None	None	no	no	no	yes	no	no	none	12	90.4	3.04	1.9	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done

23	Todalabagi	multigravida	39	no	None	None	no	no	no	yes	no	yes	none	12.4	91.7	1.56	2.086	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
22	Indi	multigravida	38	no	None	None	no	no	yes	no	no	no	Central placenta previa	9.8	86.7	2.07	2.2	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
22	Kalburgi	primigravida	38	no	None	None	no	no	no	no	no	yes	none	12.7	83.7	1.94	2.188	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
25	Bijapur	multigravida	40	no	None	None	no	no	no	yes	no	yes	Placenta previa	14	89.4	2.1	2.6	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
25	Bijapur	primigravida	38	no	None	None	no	no	yes	no	no	no	Rh negative status	10.4	92	2.42	1.9	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
24	Bijapur	multigravida	31	no	None	None	no	yes	no	no	no	yes	none	13.3	86.4	2.6	1.09	not done	not done	No hypothyroidism	1000-1500 gms	6	no	no	yes	no	no	no	no	none	not done
28	Chadchan	multigravida	40	no	None	None	no	no	no	yes	no	no	none	11.2	86	2.45	1.3	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
25	Hathahalli	multigravida	29	no	None	None	no	yes	yes	no	no	no	none	6.7	84.1	2.23	1.45	not done	not done	No hypothyroidism	1000-1500 gms	0	no	yes	yes	yes	no	no	no	none	not done
26	Bijapur	multigravida	38	no	None	None	yes	no	yes	no	no	no	none	8.1	70.1	1.35	2.6	not done	not done	No hypothyroidism	2000-2500 gms	7	yes	no	yes	no	no	no	no	none	not done
26	Muddebihal	primigravida	40	no	None	None	no	yes	no	no	no	no	none	13.3	92.7	1.46	1.8	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
26	Bijapur	multigravida	40	no	PE with severe features	None	no	no	yes	no	no	no	none	7.6	78.2	89	1.02	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
26	Bijapur	multigravida	39	no	None	None	no	no	no	yes	no	no	none	13.2	94.4	1.35	1.22	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
26	Bijapur	multigravida	38	no	None	None	no	no	no	yes	no	no	none	13.9	90.1	2.2	1.99	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	yes	no	no	no	no	none	not done
26	Tikota	primigravida	40	no	None	None	no	no	no	no	no	no	none	11.7	79.4	3.3	1.907	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
26	Bijapur	multigravida	41	no	None	None	yes	no	no	no	no	no	none	12.2	81.3	3.01	2.03	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
27	Indi	multigravida	35	no	PE with severe features	None	no	yes	no	no	no	no	Thrmbocytopenia	12.4	77.3	20	1.9	not done	not done	No hypothyroidism	2000-2500 gms	7	no	no	yes	no	no	no	no	none	not done
22	Solapur	multigravida	37	no	None	None	no	no	yes	yes	no	no	none	10.6	72.6	2.03	1.226	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
23	Bijapur	multigravida	39	no	None	None	no	no	no	no	no	no	none	12	96.1	2.52	2.62	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
34	Indi	multigravida	36	no	None	None	no	yes	no	yes	no	no	none	13.5	87.9	1.45	1.02	not done	not done	No hypothyroidism	2000-2500 gms	7	no	no	no	no	yes	no	no	none	not done
35	Kalagi	multigravida	39	no	PE without severe features	None	no	no	yes	no	no	no	none	10.6	94.3	1.97	2.92	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
27	Bijapur	primigravida	38	no	None	None	yes	no	no	no	no	no	none	11.3	86.9	1.91	2.6	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
25	Bagewadi	primigravida	37	no	eclampsia	None	no	no	no	no	no	no	Rh negative status	12.3	93.5	1.9	1.318	not done	not done	No hypothyroidism	more than 3000 gms	8	no	no	no	no	no	no	no	none	not done
21	Babaleshwara	multigravida	38	no	None	None	no	no	no	yes	no	no	none	11.5	81.3	2.65	1.023	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	yes	no	no	none	not done
21	Babaleshwara	primigravida	38	no	None	medically managed	no	no	no	no	no	no	none	12.7	103.5	202	2.801	not done	not done	No hypothyroidism	2500-3000 gms	8	no	no	no	no	no	no	no	none	not done
30	Vijayapura	primigravida	40	no	None	None	no	no	no	no	no	no	none	12.5	90.2	2.82	0.25	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
23	Bijapur	primigravida	37	no	None	None	no	no	no	no	no	yes	none	11	99.2	2.78	2.175	not done	not done	No hypothyroidism	1500-2000 gms	6	yes	no	yes	no	no	no	no	none	not done
25	Indi	multigravida	41	no	None	None	no	no	yes	no	no	no	none	9.7	81.8	2.64	0.763	not done	not done	No hypothyroidism	more than 3000 gms	8	no	no	no	no	no	no	no	none	not done
24	Muddebihal	multigravida	38	no	None	None	no	no	no	no	no	no	none	11.4	91.4	3.04	0.9	not done	not done	No hypothyroidism	1500-2000 gms	7	no	no	no	no	no	no	no	none	not done
20	Middebihal	primigravida	29	no	None	None	no	yes	no	no	no	no	Polyhydromnios	13.5	88.7	2.17	1.247	not done	not done	No hypothyroidism	500-1000gms	4	no	no	yes	yes	no	no	yes	none	not done
23	Akhalkot	multigravida	38	no	None	None	no	no	no	yes	no	no	none	11.2	79.3	2.42	2.677	not done	not done	No hypothyroidism	2000-2500 gms	7	no	no	yes	no	no	no	no	none	not done
25	Indi	multigravida	39	no	None	None	no	no	no	yes	no	no	none	13.3	94.5	1.96	2.18	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
26	Bijapur	multigravida	37	no	gestational hypertension	None	no	no	no	yes	no	no	none	11.9	87.2	1.93	2.16	not done	not done	No hypothyroidism	more than 3000 gms	8	no	no	no	no	yes	no	no	none	not done
20	Bagewadi	primigravida	40	no	None	surgically managed	no	no	yes	yes	no	no	none	9.2	86	2.04	1.858	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
23	Bijapur	multigravida	37	no	None	None	no	no	no	no	no	no	none	11.1	88.6	1.56	1.109	not done	not done	No hypothyroidism	2000-2500 gms	7	no	no	no	no	no	no	no	none	not done
23	Telabagal	multigravida	38	no	None	None	no	no	no	yes	no	no	none	11.6	100.5	2.43	1.889	not done	not done	No hypothyroidism	2000-2500 gms	7	no	no	no	no	no	no	no	none	not done

20	Bijapur	primigravida	41	no	None	None	no	no	yes	no	no	no	none	10.4	80	2.18	2.621	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
24	Bijapur	primigravida	38	no	None	None	no	no	no	no	no	no	none	11.2	90.5	3.34	1.32	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
22	Athani	multigravida	39	no	gestational hypertension	None	no	no	no	no	no	no	none	13.2	90.9	1.59	1.46	not done	not done	No hypothyroidism	more than 3000 gms	8	no	no	no	no	no	no	no	none	not done
23	Bijapur	primigravida	37	no	None	None	no	no	yes	no	no	no	none	8.7	72.6	3.64	1.742	not done	not done	No hypothyroidism	2000-2500 gms	7	no	no	no	no	no	no	no	none	not done
21	Muddebihal	primigravida	39	no	None	None	no	no	yes	no	no	no	none	8.7	72.9	2.31	2.344	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
30	Chadchan	multigravida	36	no	None	None	no	no	yes	no	no	no	none	10.1	89.6	2.02	2.26	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
22	Bijapur	primigravida	38	no	None	None	no	no	yes	no	no	no	none	9.5	78.7	3.15	2.2	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
23	Bijapur	multigravida	41	no	None	None	no	no	yes	no	no	no	none	10	74.1	2.72	2.121	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
21	Bijapur	multigravida	38	no	None	None	no	no	yes	no	no	no	none	9.8	76.1	3.2	1.88	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
27	Indi	primigravida	39	no	None	None	no	yes	yes	no	no	no	none	10.2	76.5	1.63	2.22	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
33	Bagewadi	multigravida	37	no	None	None	no	no	no	yes	no	no	none	12.1	79.8	2.37	2.68	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
34	Bijapur	multigravida	37	no	eclampsia	None	no	no	no	no	no	no	none	12.2	85.7	4.23	1.875	not done	not done	No hypothyroidism	2000-2500 gms	7	yes	no	yes	no	no	no	no	none	not done
25	Indi	multigravida	34	no	None	None	no	yes	no	no	no	no	none	13.2	87.6	2.14	0.795	not done	not done	No hypothyroidism	1500-2000 gms	7	no	no	yes	yes	no	no	no	none	not done
24	Bujapur	primigravida	40	no	None	None	no	no	no	no	no	yes	none	12	90	1.34	2.8	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
22	Babaleshwara	primigravida	40	no	None	None	no	no	no	no	no	no	none	12.2	86.7	2.81	2.1	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	yes	no	no	none	not done
29	Bagewadi	multigravida	38	no	None	None	no	no	no	no	no	no	none	12.6	90.3	3.42	1.812	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
22	Talikoti	primigravida	35	no	PE without severe features	None	no	no	yes	no	no	no	none	7.7	81	1.11	1.2	not done	not done	No hypothyroidism	1500-2000 gms	7	no	no	yes	no	no	no	no	none	not done
25	Indi	primigravida	39	no	None	None	no	no	no	no	no	no	none	11.2	89.6	3.12	2.2	not done	not done	No hypothyroidism	2500-3000 gms	6	no	no	no	no	no	no	no	none	not done
26	Bijapur	multigravida	31	no	PE with severe features	None	yes	no	yes	no	no	no	none	7.7	75.8	2.54	1.61	not done	not done	No hypothyroidism	500-1000gms	5	no	no	yes	yes	no	yes	yes	none	not done
23	Bagewadi	multigravida	30	no	None	None	no	yes	no	no	no	no	none	12.1	96.4	1.98	1.093	not done	not done	No hypothyroidism	500-1000gms	6	no	no	yes	no	no	no	no	none	not done
25	Indi	multigravida	40	no	None	None	no	no	no	yes	no	no	none	11.4	87.7	2.57	2.822	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
21	Indi	multigravida	39	no	None	None	no	no	no	no	no	no	none	11.9	93.5	2.5	2.1	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
22	Bijapur	primigravida	37	no	None	None	no	no	yes	no	no	no	Hellp syndrome	10.2	85	47000	2.653	not done	not done	No hypothyroidism	1500-2000 gms	6	yes	no	yes	no	yes	no	no	none	not done
24	Bijapur	primigravida	35	no	None	None	no	yes	no	no	no	yes	none	11.1	87.2	2.9	1.58	not done	not done	No hypothyroidism	2000-2500 gms	7	no	no	yes	no	no	no	no	none	not done
22	Indi	primigravida	39	no	None	None	no	no	no	no	no	no	none	11	78.5	3.19	2.66	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
24	Bijapur	primigravida	38	no	None	None	no	no	yes	no	no	no	none	8.8	69.7	2.22	2.534	not done	not done	No hypothyroidism	2000-2500 gms	7	yes	no	yes	no	no	no	no	none	not done
32	Indi	multigravida	30	no	None	None	no	yes	no	no	no	no	none	12.1	96.4	1.98	1.093	not done	not done	No hypothyroidism	1000-1500 gms	0	no	yes	yes	yes	no	no	no	none	not done
28	Bijapur	primigravida	38	no	None	None	no	no	no	no	no	no	none	12.6	96.4	2.6	0.8	not done	not done	No hypothyroidism	2000-2500 gms	7	yes	no	no	no	no	no	no	none	not done
20	Bijapur	primigravida	40	no	None	None	no	no	yes	no	no	no	none	10.7	74.6	2.4	2.647	not done	not done	No hypothyroidism	2500-3000 gms	7	yes	no	yes	no	yes	no	no	none	not done
30	Indi	multigravida	40	no	None	None	no	no	no	yes	no	no	none	12.7	92.4	2.44	2.452	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
28	Indi	multigravida	40	no	None	None	no	no	yes	no	no	no	none	9	94	2.21	1.132	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
21	Tikota	primigravida	38	no	None	None	no	no	no	no	no	no	none	13.4	90.4	1.7	1.2	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
25	Bijapur	multigravida	38	no	None	None	no	no	no	yes	no	no	none	12.6	86	2.47	1.88	not done	not done	No hypothyroidism	2000-2500 gms	7	no	no	no	no	no	no	no	none	not done
26	Sindagi	primigravida	39	no	PE without severe features	None	no	no	no	no	no	no	none	11.8	79.4	2.01	1.198	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
23	Kolapur	multigravida	36	no	PE with severe features	None	no	no	no	no	no	yes	none	14.6	94.3	2.15	2.02	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done

23	Indi	multigravida	37	no	None	None	no	no	yes	no	no	no	none	10.2	84.6	2.13	1.1	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
31	Athani	primigravida	39	no	None	None	no	no	yes	no	no	no	none	9.1	87.9	2.81	1.9	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
30	Indi	primigravida	38	no	None	None	no	no	yes	no	no	yes	none	10.2	91.7	1.35	2.003	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
24	Kalgi	multigravida	40	yes	None	None	no	no	no	no	no	no	none	11.4	80.2	2.91	1.812	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
28	Sindagi	multigravida	38	no	None	None	no	no	no	no	no	no	none	12.1	82.1	2.4	1.3	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
19	Bijapur	primigravida	36	no	None	None	no	no	no	no	no	yes	none	11.9	83.2	2.49	1.56	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
23	Bijapur	multigravida	39	no	None	None	no	no	no	no	no	no	none	13.5	88	2.65	1.67	not done	not done	No hypothyroidism	2500-3000 gms	8	no	no	no	no	yes	no	no	none	not done
21	Talikote	multigravida	39	no	None	None	no	no	no	no	no	no	none	11.5	79.8	2.72	1.1	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
25	Bagewadi	multigravida	37	no	None	medically managed	no	no	yes	yes	no	no	none	9.2	81.2	3.1	1.09	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
20	Chadchan	primigravida	40	no	None	None	no	no	yes	no	no	no	none	10.8	87.3	4.39	1.08	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
21	Tikota	multigravida	40	no	None	None	no	no	yes	yes	no	no	none	10.6	85.3	2	2.32	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
32	Bijapur	multigravida	39	no	None	None	no	no	yes	yes	no	no	none	10.5	77.6	2.36	2.7	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
24	Bagewadi	primigravida	37	no	None	None	no	no	yes	no	no	no	Rheumatic heart disease	9.9	70.9	5.98	2.9	not done	not done	No hypothyroidism	2000-2500 gms	7	yes	no	yes	no	no	no	no	none	not done
23	Kannur	multigravida	37	no	None	None	no	no	no	no	no	no	none	12.4	91.3	3.17	1.6	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
25	Bijapur	multigravida	35	no	None	None	no	no	no	no	no	no	none	12.6	90.6	2.66	1.6	not done	not done	No hypothyroidism	1500-2000 gms	7	yes	no	yes	no	no	no	no	none	not done
25	Muddebihal	multigravida	39	no	None	None	no	no	no	no	no	no	none	11.6	79.2	1.38	1.05	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
20	Athani	multigravida	37	no	None	None	no	no	yes	no	no	no	none	4	78.9	2.92	1.62	not done	not done	No hypothyroidism	2000-2500 gms	6	yes	no	yes	no	no	no	no	none	not done
24	Bijapur	multigravida	39	no	None	None	no	no	no	yes	no	no	none	11.4	94.5	2.29	2.509	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
22	Aliyabad	primigravida	37	no	None	None	no	no	yes	no	no	no	none	10.5	96.9	2.63	1.33	not done	not done	No hypothyroidism	2000-2500 gms	7	yes	no	yes	no	no	no	no	none	not done
34	Bilagi	multigravida	40	no	None	None	no	no	no	no	no	no	none	11.7	84.5	1.82	2.6	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
25	Hipparigi	multigravida	40	no	None	None	no	no	no	no	no	no	none	12.6	92	2.58	2.87	not done	not done	No hypothyroidism	more than 3000 gms	8	no	no	no	no	no	no	no	none	not done
19	Bijapur	primigravida	39	no	None	None	yes	no	no	no	no	no	none	12	83.7	2.76	6.604	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
20	Bijaput	primigravida	39	no	None	None	no	no	yes	no	no	no	none	10.8	80	3.37	2.08	not done	not done	No hypothyroidism	2000-2500 gms	7	yes	no	yes	no	no	no	no	none	not done
21	Muddebihal	primigravida	40	no	None	None	no	no	yes	no	no	no	none	10.8	80	3.37	2.9	not done	not done	No hypothyroidism	2000-2500 gms	8	yes	no	yes	no	no	no	no	none	not done
23	Bagewadi	primigravida	38	no	None	None	no	no	yes	no	no	no	none	10.4	88.4	1.53	1.61	not done	not done	No hypothyroidism	more than 3000 gms	8	no	no	no	no	yes	no	no	none	not done
30	Sindagi	multigravida	36	no	None	None	no	no	no	no	no	no	none	11.2	85.4	3.06	1.787	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
20	Talikote	multigravida	35	no	None	None	no	yes	yes	no	no	no	none	10.7	74.7	3.56	2.788	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	yes	no	none	not done
28	Jamkandi	multigravida	39	yes	PE without severe features	None	no	no	no	no	no	no	none	13.1	85.7	3.73	1.2998	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	MAS	not done
23	Indi	primigravida	41	no	None	None	no	no	no	no	no	no	none	11.6	78.7	2.25	2.199	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
19	Muddebihal	primigravida	32	no	eclampsia	None	no	yes	yes	no	no	no	none	10.8	77	2.06	2.32	not done	not done	No hypothyroidism	1500-2000 gms	7	yes	no	yes	no	no	no	no	none	not done
26	Bijapur	primigravida	39	no	None	None	yes	no	yes	yes	no	no	none	9.4	74.9	2.04	0.25	not done	not done	No hypothyroidism	2000-2500 gms	7	no	no	no	no	no	no	no	none	not done
24	Dandeli	primigravida	39	no	PE with severe features	None	no	no	yes	no	no	no	none	10.1	89.6	2.27	1.2	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
24	Arakeri	multigravida	39	no	None	medically managed	no	no	yes	no	no	no	none	8.8	79.6	3.21	0.8	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
21	Bagewadi	primigravida	39	no	PE with severe features	None	no	no	no	no	no	no	none	11.2	86.4	2.27	2.394	not done	not done	No hypothyroidism	2000-2500 gms	6	yes	no	yes	no	no	no	no	MAS	not done
26	Bijapur	multigravida	35	no	None	None	no	yes	no	no	no	no	Ricketsial fever	11.7	74.3	2.19	1.1	not done	not done	No hypothyroidism	1500-2000 gms	7	no	no	yes	no	no	no	no	none	not done

28	Harinal	multigravida	37	no	None	None	no	no	no	yes	no	no	none	12.7	83.6	2.07	0.924	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
25	Bijapur	multigravida	40	no	None	None	no	no	no	yes	no	no	none	13	89.7	1.54	1.147	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
25	Devaripparigi	primigravida	40	no	None	None	no	no	yes	no	no	no	none	10.9	76	2.91	0.64	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
30	Bijapur	primigravida	36	no	None	None	no	yes	no	no	no	no	Hellp syndrome	11.5	88.1	1.57	1.1	not done	not done	No hypothyroidism	1500-2000 gms	7	no	no	yes	no	no	no	no	none	not done
25	Talikote	multigravida	40	no	None	None	no	no	yes	no	no	no	none	10.1	78.9	2.15	1.2	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
26	Yadiyapur	multigravida	39	no	None	None	yes	no	yes	yes	no	no	none	9.7	87	1.23	1.2	not done	not done	No hypothyroidism	2500-3000 gms	0	no	yes	no	yes	no	no	no	none	not done
28	Indi	multigravida	36	no	None	None	no	yes	yes	no	no	no	none	5.4	53.5	2.14	1.25	not done	not done	No hypothyroidism	2000-2500 gms	7	yes	no	yes	no	no	no	no	none	not done
24	Tanda	multigravida	38	no	None	None	no	no	yes	yes	no	no	none	10.4	70.5	3.9	2.3	not done	not done	No hypothyroidism	2500-3000 gms	8	no	no	no	no	no	no	no	none	not done
20	Bijapur	primigravida	40	no	None	None	no	no	no	no	no	no	none	13.3	86.6	3.88	1.319	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
25	Indi	primigravida	37	no	None	None	no	no	no	no	no	no	none	11	79	2.79	2.286	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
22	Chavabai	primigravida	36	no	None	None	no	yes	yes	no	no	no	none	9.5	80.8	3.49	2.213	not done	not done	No hypothyroidism	1500-2000 gms	7	yes	no	yes	no	no	no	no	none	not done
24	Jamkandi	multigravida	41	no	None	None	no	no	no	no	no	no	none	12.7	90.3	2.22	2.1	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
20	Bijapur	primigravida	40	no	None	None	no	no	yes	no	no	yes	none	8	69.3	3.42	1.429	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
24	Indi	primigravida	38	no	None	None	no	no	no	no	no	no	none	12.9	82.5	1.9	2.3	not done	not done	No hypothyroidism	2000-2500 gms	6	yes	no	yes	no	no	no	no	none	not done
28	Indi	multigravida	36	no	None	None	no	yes	yes	no	no	no	none	10.1	78.1	2.34	2.6	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	yes	no	no	none	not done
22	Budihal	multigravida	38	no	None	None	no	no	no	yes	no	no	none	13	94.8	1.9	1.5	not done	not done	No hypothyroidism	2500-3000 gms	8	no	no	no	no	no	no	no	none	not done
25	Indi	multigravida	38	no	None	None	no	no	no	no	no	no	none	11.7	72.6	2.95	2.042	not done	not done	No hypothyroidism	2500-3000 gms	6	no	no	no	no	no	no	no	none	not done
22	Bijapur	multigravida	37	no	PE without severe features	None	no	no	no	yes	no	no	none	14.2	70.9	1.59	1.2	not done	not done	No hypothyroidism	2000-2500 gms	7	yes	no	yes	no	no	no	no	none	not done
26	Bijapur	multigravida	39	no	PE with severe features	None	no	no	no	yes	no	no	none	12.2	82	1.72	1.3	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
27	Bujapur	multigravida	35	no	None	medically managed	no	yes	no	no	no	no	none	9.6	92	2.1	1.9	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
24	Bijapur	multigravida	38	no	None	None	no	no	yes	no	no	no	none	10.4	71.4	2.85	1.4	not done	not done	No hypothyroidism	2000-2500 gms	7	yes	no	yes	no	no	no	no	none	not done
23	Bijapur	multigravida	37	no	None	None	no	no	yes	no	no	no	Hbsag and covid positive	10.4	76.9	1.95	2	not done	not done	No hypothyroidism	2000-2500 gms	6	yes	no	yes	no	no	no	no	none	not done
22	Bijapur	multigravida	38	no	None	medically managed	no	no	no	no	no	no	none	12.1	89.3	0.93	1.7	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
28	Bijapur	primigravida	37	no	None	None	no	no	no	no	no	no	none	12.3	84	1.72	1.431	not done	not done	No hypothyroidism	more than 3000 gms	6	no	no	no	no	no	no	no	none	not done
25	Solapur	multigravida	38	no	None	None	no	no	no	no	no	no	none	11.8	84.8	1.16	1.212	not done	not done	No hypothyroidism	2000-2500 gms	7	yes	no	yes	no	no	no	no	none	not done
25	Devaripparigi	multigravida	33	no	None	None	no	yes	no	no	no	no	Placenta previa	11.2	78	1.62	1.3	not done	not done	No hypothyroidism	1500-2000 gms	7	no	no	yes	no	no	yes	no	none	not done
28	Bijapur	multigravida	36	no	None	None	no	yes	yes	no	no	no	none	9.7	72.7	1.93	1.24	not done	not done	No hypothyroidism	1500-2000 gms	7	no	no	yes	no	no	no	no	none	not done
31	Bijapur	multigravida	31	no	None	None	no	yes	no	no	no	no	none	11	91.9	1.91	1.233	not done	not done	No hypothyroidism	1500-2000 gms	7	no	no	yes	no	no	no	no	none	not done
28	Indi	primigravida	38	no	None	None	no	no	no	no	no	yes	none	11.9	80.2	2.58	2.751	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
28	Bijapur	multigravida	38	no	None	medically managed	no	no	yes	no	no	no	none	7.4	71.9	1.41	1.323	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
22	Bijapur	multigravida	35	no	None	None	no	yes	no	yes	no	no	Placenta previa	12.5	88.4	1.39	2.002	not done	not done	No hypothyroidism	2000-2500 gms	7	no	no	yes	no	no	no	no	none	not done
25	Bijapur	multigravida	30	no	PE with severe features	None	no	yes	yes	no	no	no	Hellp sundrome	7.8	79.5	0.17	1.912	not done	not done	No hypothyroidism	1000-1500 gms	6	no	no	yes	no	no	yes	no	none	not done
22	Muddebihal	primigravida	33	no	eclampsia	None	no	no	yes	no	no	no	none	10.9	92.4	1.69	1.6	not done	not done	No hypothyroidism	2000-2500 gms	6	no	no	yes	no	no	no	no	none	not done
21	Indi	multigravida	35	no	None	None	no	yes	yes	no	no	no	AFLP	10.5	78.9	1.23	1.8	not done	not done	No hypothyroidism	2000-2500 gms	7	no	no	yes	no	yes	no	no	none	not done
24	Bijapur	primigravida	40	no	PE without severe features	None	no	no	yes	no	no	no	none	10.7	94.3	1.94	1.7	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done

33	Bijapur	multigravida	37	no	None	None	no	no	no	yes	no	no	none	13.4	78.5	1.18	1.3	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
18	Sindagi	primigravida	37	no	None	None	no	no	yes	no	no	no	none	8.2	69.4	1.85	1.762	not done	not done	No hypothyroidism	2000-2500 gms	7	no	no	yes	no	yes	no	no	none	not done
35	Bijapur	primigravida	35	no	None	None	no	yes	yes	no	no	no	none	10.9	84.5	3.1	2.2	not done	not done	No hypothyroidism	2000-2500 gms	7	no	no	yes	no	no	no	no	none	not done
29	Bijapur	multigravida	39	no	None	None	no	no	no	no	no	no	none	12.8	79.8	2.35	1.4	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
22	Bijapur	multigravida	40	no	None	None	no	no	no	no	no	no	none	12.6	83.9	2.26	1.6	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	yes	no	none	not done
19	Bijapur	primigravida	40	no	None	None	no	no	yes	no	no	no	none	9.5	79.7	1.62	2.797	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
21	Bijapur	primigravida	30	no	None	None	no	yes	yes	no	no	no	none	9.9	86.8	1.79	1.2	not done	not done	No hypothyroidism	1000-1500 gms	5	no	no	yes	yes	no	yes	yes	none	not done
22	Honalli	multigravida	34	no	None	None	no	yes	no	no	no	no	none	13.4	81.1	5.58	2.265	not done	not done	No hypothyroidism	1500-2000 gms	7	no	no	yes	no	yes	no	no	none	not done
28	Bijapur	primigravida	39	no	None	None	no	no	no	no	no	no	none	11.2	87	1.69	1.2	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
21	Devaripparigi	primigravida	39	no	None	None	no	no	yes	no	no	no	none	8.7	85.4	7.06	1.2	not done	not done	No hypothyroidism	2500-3000 gms	0	no	yes	no	yes	no	no	no	none	not done
18	Bijapur	primigravida	38	no	None	None	no	no	no	no	no	no	none	12.1	92.3	2.32	0.73	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
20	Indi	multigravida	42	no	PE with severe features	None	no	yes	no	no	no	no	none	11	90.5	3.34	2.674	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
24	Bijapur	multigravida	38	no	PE with severe features	None	no	no	no	yes	no	no	none	12.3	90.6	2.23	1.08	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
22	Bijapur	multigravida	40	no	None	None	no	no	no	yes	no	no	none	12.5	88.8	2.1	1.23	not done	not done	No hypothyroidism	more than 3000 gms	8	no	no	no	no	no	no	no	none	not done
30	Bijapur	primigravida	36	no	None	None	no	yes	no	no	no	yes	none	11.2	80.4	2.99	0.62	not done	not done	No hypothyroidism	2000-2500 gms	7	no	no	yes	no	no	no	no	none	not done
26	Indi	multigravida	41	no	None	None	no	no	yes	no	no	no	none	10.6	8.2	3.49	2.367	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	RDS	not done
29	Chadchan	multigravida	39	no	None	None	no	no	yes	no	no	no	none	10	64.3	3.94	1.1	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
28	Indi	multigravida	37	no	PE without severe features	None	no	no	yes	no	yes	no	none	10.9	83.4	1.96	1.441	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
25	Bijapur	multigravida	31	no	None	None	no	yes	no	yes	no	yes	none	11.6	88.4	1.79	1.221	not done	not done	No hypothyroidism	1500-2000 gms	7	no	no	yes	no	no	no	no	none	not done
28	Bijapur	multigravida	39	no	None	None	no	no	no	yes	no	yes	none	11.2	93.7	3.19	2.297	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
22	Bijapur	primigravida	38	no	None	None	no	no	no	no	no	no	none	14.1	95.6	1.95	2.034	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
23	Sangoli	multigravida	41	no	None	None	no	no	no	no	no	no	none	12.2	89.2	2.22	2.16	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	RDS	not done
22	Sindagi	multigravida	38	no	eclampsia	None	no	no	yes	yes	no	no	none	10.9	71.6	2.17	1.6	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
22	Gulbarga	primigravida	40	no	None	None	no	no	no	yes	no	yes	none	13.9	80.7	1.35	1.7	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
20	Honawad	primigravida	40	no	PE without severe features	None	no	no	no	no	no	no	none	11.6	86.4	1.94	2.3	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
20	Chadchan	primigravida	40	no	None	None	no	no	yes	no	no	no	none	9.2	68.3	2.24	2.113	not done	not done	No hypothyroidism	2000-2500 gms	7	yes	no	yes	no	no	no	no	none	not done
32	Bijapur	multigravida	38	no	None	None	no	no	no	no	no	no	none	11.9	72.9	1.43	1.57	not done	not done	No hypothyroidism	more than 3000 gms	7	no	yes	no	no	no	no	no	HIE 2	not done
24	Shiraguppi	primigravida	36	no	PE with severe features	None	no	yes	no	no	no	yes	none	12.3	81.2	2.42	1.9	not done	not done	No hypothyroidism	2000-2500 gms	7	yes	no	yes	no	no	no	no	none	not done
28	Sindagi	multigravida	38	no	None	medically managed	no	no	yes	no	no	no	none	9.4	67.5	2.65	1.801	not done	not done	No hypothyroidism	1000-1500 gms	0	yes	yes	yes	yes	no	no	no	none	not done
33	Bijapur	multigravida	36	no	PE without severe features	None	no	yes	no	yes	no	no	none	11.3	90.2	3.12	1.33	not done	not done	No hypothyroidism	1500-2000 gms	7	no	no	yes	no	no	no	no	none	not done
25	Indi	primigravida	40	no	None	None	no	no	no	no	no	no	none	14.7	94.4	1.77	2.3	not done	not done	No hypothyroidism	2000-2500 gms	6	no	no	no	no	no	no	no	none	not done
21	Bijapur	primigravida	38	no	None	None	no	no	yes	yes	no	no	none	9.6	70.9	1.32	1.7	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
25	Indi	multigravida	32	no	None	None	no	yes	yes	no	no	no	Rh negative status	10.8	62	3.73	0.28	not done	not done	No hypothyroidism	1000-1500 gms	7	no	no	yes	no	no	no	no	none	not done
21	Indi	primigravida	39	no	None	None	no	no	no	no	no	no	none	11.5	79.7	2.62	2.1	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
21	Sindagi	primigravida	40	no	PE with severe features	None	no	no	no	no	no	no	none	11	74	1.04	1.8	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done

20	Bijapur	primigravida	40	no	PE with severe features	None	no	no	no	no	no	no	none	12.7	90.6	2.47	2.79	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	yes	no	no	none	not done
23	Jamkandi	primigravida	39	no	PE with severe features	None	no	no	no	no	no	no	none	12.6	87.7	2.19	2.1	not done	not done	No hypothyroidism	2000-2500 gms	7	yes	no	yes	no	no	no	no	none	not done
22	Bijapur	multigravida	40	no	None	None	no	no	no	no	no	no	none	12.6	89.1	2.77	1.6	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
20	Solapur	primigravida	40	no	gestational hypertension	None	no	no	yes	no	yes	no	none	10.7	82.1	3.27	2.749	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
32	Indi	multigravida	37	no	None	None	no	no	yes	no	no	no	none	9.1	68.6	4.63	2.4	not done	not done	No hypothyroidism	2000-2500 gms	7	yes	no	yes	no	no	no	no	none	not done
20	Nidoni	primigravida	40	no	PE with severe features	None	no	no	no	no	no	no	none	11.7	85.8	2.09	0.7	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
24	Sindagi	primigravida	37	no	None	None	no	no	no	no	no	no	none	13.5	82.9	1.75	2.7	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
23	Indi	multigravida	29	no	None	None	yes	yes	yes	no	no	no	none	7.3	64.8	1.76	1.7	not done	not done	No hypothyroidism	1000-1500 gms	4	no	no	yes	yes	no	yes	yes	none	not done
28	Tikota	multigravida	37	no	None	None	no	no	no	yes	no	no	none	14.2	90.2	1.75	2.465	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
20	Muddebihal	multigravida	38	no	None	None	no	no	no	no	no	no	none	11.6	76.9	2.87	1.4	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
21	Muddebihal	primigravida	38	no	None	None	no	no	no	no	no	no	none	12.2	85.1	2.38	1.46	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
23	Hadagali	multigravida	37	no	None	None	no	no	yes	yes	no	no	none	9.8	88.7	3.01	1.7	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
25	Jainapur	multigravida	35	no	PE with severe features	None	no	yes	no	no	no	yes	none	12.2	78.6	1.83	2.2	not done	not done	No hypothyroidism	1000-1500 gms	7	yes	no	yes	no	no	no	no	none	not done
28	Bijapur	multigravida	38	no	None	None	no	no	no	yes	yes	no	none	11	83.5	3.25	2.5	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
21	Nandihal	multigravida	40	no	None	None	no	no	yes	no	no	yes	none	8.7	88.8	2.49	2.736	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
21	Bomanjogi	primigravida	38	no	PE with severe features	None	no	no	yes	no	no	no	none	9.6	67.3	2.72	2.1	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
25	Mavinakonda	multigravida	38	no	None	None	no	no	yes	no	no	yes	none	10.3	89.8	2.1	2.4	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
30	Hipparagi	multigravida	38	no	None	None	no	no	no	yes	no	no	Gestational thrombocytopenia	12.1	8.1	0.74	1.8	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
24	Bijapur	primigravida	110	no	None	None	no	no	no	no	no	no	none	12.2	83.3	3.29	2.1	not done	not done	No hypothyroidism	2000-2500 gms	7	yes	no	yes	no	no	no	no	none	not done
25	Muddebihal	multigravida	36	no	None	both	no	yes	yes	yes	no	no	Placenta previa	6.1	69.7	3.49	1.517	not done	not done	No hypothyroidism	2000-2500 gms	7	no	no	yes	no	no	no	no	none	not done
23	Chadchan	multigravida	33	no	None	None	no	yes	no	yes	no	no	none	11	68.1	1.12	3	not done	not done	No hypothyroidism	2000-2500 gms	7	no	no	yes	no	no	no	no	none	not done
20	Ningadalli	multigravida	38	no	None	None	no	no	no	no	no	yes	none	13.4	89.6	2.08	2.1	not done	not done	No hypothyroidism	2000-2500 gms	6	yes	no	yes	no	no	no	no	none	not done
28	Bagewadi	multigravida	39	no	None	None	no	no	no	no	no	no	none	12.4	77.5	2.39	2.35	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
23	Talikote	primigravida	38	no	eclampsia	None	no	no	no	no	no	no	none	11.2	82.4	2.32	1.2	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
30	Bijapur	primigravida	39	no	None	None	no	no	no	no	no	no	Gestational thrombocytopenia	14.2	82.5	1.05	2.9	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
20	Sindagi	multigravida	37	no	None	None	no	no	yes	yes	no	yes	none	10.8	75.7	3.2	2.1	not done	not done	No hypothyroidism	2000-2500 gms	7	yes	no	yes	no	no	no	no	none	not done
28	Jamkandi	multigravida	37	no	None	None	no	no	yes	yes	no	no	none	13.5	89.8	1.8	2.2	not done	not done	No hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	not done
23	Bijapur	multigravida	40	no	None	None	no	no	yes	no	no	no	none	10	75	3.91	2.42	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
25	Indi	multigravida	39	no	None	None	no	no	yes	no	no	no	none	10.7	83	2.37	0.25	not done	not done	No hypothyroidism	more than 3000 gms	8	no	no	no	no	no	no	no	none	not done
28	Bijapur	multigravida	38	no	None	None	yes	no	no	no	no	no	none	12.5	92.1	3.06	2.862	not done	not done	No hypothyroidism	2000-2500 gms	7	no	no	no	no	no	no	no	none	not done
28	Indi	multigravida	39	no	None	None	no	no	no	no	no	no	none	10.9	95.8	1.97	2.4	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
24	Bijapur	multigravida	40	no	None	None	no	no	yes	no	no	no	none	7.5	62.3	3.02	1.9	not done	not done	No hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	not done
29	Bijapur	primigravida	39	no	None	None	no	no	no	no	no	no	none	14.3	94.3	1.53	3.4	0.4	0.4	Overt hypothyroidism	2500-3000 gms	8	no	no	no	no	no	no	no	none	not done
20	Hosapet, Sangoli	primigravida	38	no	PE with severe features	None	no	no	no	no	no	yes	Premature rupture of membranes	11.4	85.1	3.61	3.72	0.5	13.2	Overt hypothyroidism	2500-3000 gms	6	no	no	no	no	no	yes	no	none	13.2
28	Marakatinahalli, Bagewadi	multigravida	41	no	None	None	no	no	no	no	no	no	Acute gastroenteritis	11.1	90	1.99	3.55	0.5	4	Overt hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	13.4

25	Vijayapura	multigravida	35	yes	None	None	no	yes	no	no	no	no	none	12.3	87.7	2.42	12.15	0.4	0.8	Overt hypothyroidism	2000-2500 gms	7	no	no	no	no	no	no	no	Meningitis	1.8
19	Bagalkot	primigravida	36	no	None	None	no	yes	no	no	no	no	none	14.9	92.6	3.1	6.17	0.45	0.9	Overt hypothyroidism	1000-1500 gms	7	yes	no	yes	no	no	no	no	RDS	2.52
32	Vijayapura	multigravida	36	yes	PE without severe features	None	no	yes	no	yes	no	no	none	11.1	74.8	2.6	7.82	0.6	1.2	Overt hypothyroidism	2500-3000 gms	7	no	no	no	no	yes	no	no	none	1.3
33	Vijayapura	multigravida	39	yes	None	None	no	no	no	no	no	no	PROM	12	82	2.56	4.29	0.5	1	Overt hypothyroidism	more than 3000 gms	8	no	no	no	no	yes	no	no	none	3.254
28	Bijapur	primigravida	35	yes	imminent eclampsia	None	no	no	yes	no	no	no	none	10.9	81.7	2.84	2.112	0.6	21.2	Overt hypothyroidism	2000-2500 gms	7	no	no	yes	no	no	no	no	none	12
26	Bijapur	multigravida	31	no	None	None	no	yes	yes	no	no	no	Rh negative status	9.3	72.8	3.35	6.9	0.6	20.8	Overt hypothyroidism	1500-2000 gms	6	no	no	yes	no	no	no	no	none	3.3
26	Indi	multigravida	33	no	PE without severe features	None	no	yes	yes	no	no	no	none	8.8	57.6	3.47	3.104	0.23	0.8	Overt hypothyroidism	1000-1500 gms	7	no	no	yes	no	no	no	no	MAS	8.6
25	Bijapur	multigravida	36	no	None	None	no	yes	yes	no	no	no	none	9.4	97.8	2.82	6.722	0.7	0.6	Overt hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	6.8
29	Bijapur	multigravida	40	yes	None	None	no	no	no	no	no	no	none	12	85	216	2.082	0.6	25.1	Overt hypothyroidism	2500-3000 gms	7	no	no	no	no	yes	no	no	none	7.8
25	Talikote	multigravida	38	yes	PE with severe features	medically managed	no	no	yes	no	no	no	none	10	97.7	226	4.067	0.6	0.8	Overt hypothyroidism	more than 3000 gms	8	no	no	no	no	no	no	no	none	7.2
28	Muddebihal	multigravida	39	yes	None	None	no	no	no	yes	no	no	none	11.8	87.1	286	5.681	0.5	0.8	Overt hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	10.2
25	Bijapur	multigravida	36	yes	None	None	no	no	yes	yes	no	no	Polyhydromnios	10.5	84.8	175	1.719	0.5	140.3	Overt hypothyroidism	more than 3000 gms	7	no	no	no	no	yes	no	no	none	11.2
22	Babaleshwara	primigravida	37	no	gestational hypertension	None	no	no	yes	no	no	no	none	8.5	91.5	147	4.1	0.8	0.3	Overt hypothyroidism	more than 3000 gms	8	no	no	no	no	no	no	no	none	9.2
21	Vijayapura	multigravida	37	no	PE without severe features	medically managed	no	no	yes	no	no	no	none	9.2	75.2	93	7.964	0.6	0.8	Overt hypothyroidism	2500-3000 gms	8	no	no	no	no	no	no	no	none	8.2
25	Bijapur	multigravida	31	no	imminent eclampsia	None	yes	yes	yes	yes	no	no	none	7.7	93.1	1.82	4.564	0.56	122	Overt hypothyroidism	2000-2500 gms	0	no	yes	yes	yes	no	no	no	none	10.4
20	Bijapur	primigravida	37	no	gestational hypertension	medically managed	no	no	yes	no	no	no	none	10	82.2	2.88	5.173	0.3	26	Overt hypothyroidism	2500-3000 gms	7	no	no	no	no	yes	no	no	none	13
30	Bijapur	multigravida	38	yes	gestational hypertension	None	no	no	no	yes	no	no	none	11.7	91.9	2.24	3.2	0.6	14	Overt hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	12.2
18	Bijapur	primigravida	39	no	None	None	no	no	yes	no	no	no	none	10.2	94.8	2.6	4.203	0.8	0.4	Overt hypothyroidism	2500-3000 gms	7	no	no	no	no	yes	no	no	none	8.2
24	Bijapur	multigravida	40	no	None	None	no	no	no	no	no	no	none	11.8	80.4	2.37	5.436	0.8	0.2	Overt hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	14.6
18	Indi	primigravida	39	no	None	None	no	no	no	no	no	no	none	13.2	86.3	2.54	10.429	0.8	0.12	Overt hypothyroidism	2500-3000 gms	7	no	no	no	no	yes	no	no	none	10
24	Bijapur	multigravida	41	yes	None	None	yes	no	yes	no	no	no	Polyhydromnios	10	82.2	2.13	5.436	0.24	13	Overt hypothyroidism	more than 3000 gms	5	no	no	no	yes	no	no	no	HIE	16
31	Indi	primigravida	37	no	PE with severe features	None	no	no	yes	no	no	yes	none	10.4	84.8	1.57	5.209	0.8	0.45	Overt hypothyroidism	more than 3000 gms	8	no	no	no	no	no	no	no	none	16
21	Bagewadi	multigravida	39	no	PE with severe features	None	no	no	no	no	no	no	none	11.6	89	2.2	6.58	0.6	1.2	Overt hypothyroidism	2500-3000 gms	8	no	no	no	no	no	no	no	none	10.9
34	Bagewadi	multigravida	39	no	None	None	no	no	no	no	no	no	none	12	82.4	2.03	5.4	0.5	16	Overt hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	8.6
24	Bijapur	multigravida	40	no	None	None	no	no	yes	no	no	no	none	8.3	63.5	1.72	3.496	0.77	0.5	Overt hypothyroidism	2500-3000 gms	0	no	yes	yes	yes	no	no	no	none	8.8
20	Indi	primigravida	41	no	None	None	no	no	no	no	no	no	none	12.5	82.3	2.45	6.4	0.21	1.5	Overt hypothyroidism	2000-2500 gms	7	no	no	yes	no	no	no	no	none	7.6
32	Kalburgi	primigravida	40	yes	PE without severe features	None	no	no	yes	no	no	no	AFLP	9.9	87	1.53	7.2	0.5	120.5	Overt hypothyroidism	more than 3000 gms	0	no	yes	no	yes	no	no	no	none	9.7
33	Muddebihal	multigravida	40	yes	None	None	no	no	no	yes	no	no	none	11.2	92.7	2.91	4.564	0.6	143	Overt hypothyroidism	2500-3000 gms	7	no	no	no	no	yes	no	no	none	8.6
22	Muddebihal	multigravida	37	yes	imminent eclampsia	None	no	no	no	no	no	no	none	11.8	91.8	2.83	4.6	0.8	0.34	Overt hypothyroidism	2500-3000 gms	7	no	no	no	no	yes	no	no	none	8.2
30	Tikota	multigravida	36	yes	PE with severe features	None	no	yes	yes	no	no	no	none	7.8	87.2	1.83	3.9	0.5	7.8	Overt hypothyroidism	1500-2000 gms	7	yes	no	yes	no	no	no	no	none	18.7
24	Indi	primigravida	40	no	None	None	no	no	no	no	no	no	none	12.1	92	3.43	3.042	0.6	0.8	Overt hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	5.6
30	Tikota	multigravida	36	yes	PE with severe features	None	no	yes	yes	no	no	no	none	7.8	87.2	1.83	39.733	0.5	7.8	Overt hypothyroidism	1500-2000 gms	8	yes	no	yes	no	no	no	no	none	9.8
21	Gulbarga	primigravida	37	no	eclampsia	None	no	no	yes	no	no	no	none	10.4	90.8	3.35	4.867	0.4	92	Overt hypothyroidism	2500-3000 gms	5	no	no	no	yes	no	no	no	Birth asphyxia	8.4
21	Sindagi	primigravida	40	no	gestational hypertension	None	no	no	no	no	no	no	none	11.4	95	3.16	4.09	0.2	33.4	Overt hypothyroidism	more than 3000 gms	7	yes	no	no	no	yes	no	no	none	9.7
30	Bagewadi	primigravida	34	no	None	None	no	no	no	no	no	no	Gestational thrombocytopenia	13.4	88.6	1.004	3.8	0.9	69.7	Overt hypothyroidism	1500-2000 gms	7	no	no	yes	no	no	no	no	none	12.1

34	Hipparigi	multigravida	38	yes	PE with severe features	medically managed	no	no	yes	yes	no	no	none	9.2	70.8	1.837	3.638	0.5	10.8	Overt hypothyroidism	2500-3000 gms	0	no	yes	no	yes	no	no	no	none	9.7
30	Nidagund	primigravida	40	yes	PE without severe features	None	no	no	yes	no	no	no	none	10.7	93.2	2.15	7.663	0.41	0.8	Overt hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	12.1
23	Athani	primigravida	40	yes	None	medically managed	no	no	yes	no	no	yes	none	9.5	68	2.19	4.243	0.6	0.8	Overt hypothyroidism	2000-2500 gms	7	yes	no	yes	no	no	no	no	none	18.1
20	Muddebihal	primigravida	37	no	PE with severe features	None	no	no	yes	no	no	yes	none	8.9	79.9	2.69	5.823	0.1	0.6	Overt hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	4
28	Muddebihal	multigravida	39	no	PE with severe features	None	no	no	no	no	no	no	none	11.9	80.2	2.73	3.817	0.1	0.8	Overt hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	12.1
27	Kondaguli	primigravida	37	no	PE with severe features	None	no	no	no	no	no	no	none	11	89.1	3.1	5.006	1	0.8	Overt hypothyroidism	2000-2500 gms	7	yes	no	yes	no	no	no	no	none	9.8
28	Sindagi	multigravida	35	no	imminent eclampsia	None	no	yes	no	yes	no	no	Partial Hellp	14.34	81.7	1.11	11.359	0.6	17	Overt hypothyroidism	1500-2000 gms	7	no	no	yes	no	no	no	no	none	9.3
22	Bagalkot	primigravida	39	yes	eclampsia	None	no	no	no	no	no	no	none	12.2	89.8	2.52	3.372	0.3	0.9	Overt hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	8.9
29	Belgavi	primigravida	31	yes	None	None	no	yes	no	no	no	no	Covid positive	13.4	81.7	1.43	4.3	0.12	0.8	Overt hypothyroidism	1000-1500 gms	0	no	yes	yes	yes	no	no	no	none	14.6
22	Bijapur	multigravida	33	yes	None	None	no	yes	no	no	no	no	none	11.9	83.9	2.96	4.5	0.3	65	Overt hypothyroidism	2000-2500 gms	6	no	no	yes	no	no	no	yes	Because of cardiac arrest	11.1
32	Bijapur	primigravida	33	yes	None	None	no	yes	no	no	no	no	none	11.6	88.4	4.37	2.3	0.4	0.8	Overt hypothyroidism	1500-2000 gms	7	no	no	yes	no	no	no	no	none	5.6
32	Bijapur	multigravida	39	yes	None	None	no	no	no	no	no	no	none	12.1	36.5	2.72	2.36	0.3	0.8	Overt hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	4.6
30	Chadchan	multigravida	40	no	PE with severe features	None	no	no	yes	yes	no	no	none	9.7	97.3	2.52	3.985	0.4	1.2	Overt hypothyroidism	more than 3000 gms	8	no	no	no	no	no	no	no	none	9.6
26	Indi	multigravida	37	no	None	None	no	no	yes	yes	no	no	Rheumatic heart disease	8.5	68.4	3.1	6.381	0.5	0.8	Overt hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	10.9
32	Budagali	multigravida	38	yes	None	None	no	no	no	no	no	no	none	12.4	83.8	1.87	3.116	0.4	239.3	Overt hypothyroidism	2000-2500 gms	7	yes	no	yes	no	no	no	no	none	12.678
28	Indi	primigravida	38	no	None	None	no	no	yes	no	no	no	none	10.7	95.3	2.6	3.46	0.4	2.1	Overt hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	11.26
32	Bijapur	multigravida	37	yes	None	None	no	no	no	yes	no	no	none	11.6	89.8	1.44	19.663	0.6	74.2	Overt hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	14
23	Indi	multigravida	37	yes	None	None	no	no	no	no	no	no	none	12.3	86.6	1.78	17.23	0.5	302	Overt hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	13
21	Bijapur	primigravida	40	yes	None	None	yes	no	yes	yes	no	no	none	6.1	117.6	0.36	10.121	0.25	0.8	Overt hypothyroidism	1500-2000 gms	7	yes	no	yes	no	no	no	no	none	11
21	Indi	primigravida	38	no	None	None	no	no	yes	no	no	no	none	9.6	70.9	1.32	5.152	0.4	0.8	Overt hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	12
24	Indi	multigravida	39	no	None	None	no	no	no	no	no	no	none	13.6	78.9	1.98	4.151	0.4	0.8	Overt hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	7
20	Nagthan	primigravida	38	yes	None	None	no	no	no	no	no	no	none	11.6	84.8	2.18	15.63	0.5	0.8	Overt hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	14
20	Bijapur	primigravida	36	no	None	None	yes	yes	yes	no	no	no	none	6.8	66.1	1.38	4.412	0.3	0.8	Overt hypothyroidism	2000-2500 gms	7	no	no	no	no	no	no	no	Birth asphyxia	4.6
27	Indi	multigravida	39	no	PE without severe features	None	no	no	yes	no	no	no	none	10	85.5	2.8	4.69	0.6	1.9	Overt hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	0.37
30	Belagavi	multigravida	41	no	None	None	no	no	yes	no	no	no	none	7.9	85.1	1.2	4.004	0.4	1.3	Overt hypothyroidism	more than 3000 gms	7	no	no	no	no	yes	no	no	none	6.4
20	Indi	multigravida	35	no	None	None	no	yes	yes	no	no	no	none	10.9	93.5	216	11.45	0.6	1	Overt hypothyroidism	1500-2000 gms	5	yes	no	yes	yes	no	no	yes	none	5.4
22	Sangoli	multigravida	36	no	None	None	no	yes	yes	no	no	no	none	10.4	85.4	2.77	7.64	0.6	1.8	Overt hypothyroidism	2000-2500 gms	7	no	no	yes	no	no	no	no	none	0.5
28	Bijapur	multigravida	38	no	None	None	no	no	yes	no	no	no	none	10.7	86	247	5.078	0.4	92.6	Overt hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	8.7
25	Gulbarga	multigravida	37	no	None	None	no	no	no	no	no	no	none	12.6	79	2.09	1.604	0.5	31.6	Overt hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	2.147
21	Athani	multigravida	36	no	None	None	no	no	no	no	no	no	none	10	81.6	2.97	3.16	0.5	0.8	Overt hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	1.367
25	Gulbarga	multigravida	39	no	None	None	no	no	yes	no	no	no	none	10.5	78.3	3.11	3.089	0.5	0.8	Overt hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	9.8
32	Indi	primigravida	32	yes	None	None	no	yes	no	no	no	no	none	14	75.7	2.6	3.443	0.29	112.4	Overt hypothyroidism	1000-1500 gms	5	no	no	yes	yes	no	no	yes	none	3.5
19	Indi	primigravida	38	no	None	None	no	yes	no	no	no	no	none	11.2	89	2.2	8.4	0.23	0.8	Overt hypothyroidism	2500-3000 gms	7	no	no	yes	yes	no	no	yes	none	11.2
23	Koppal	multigravida	37	no	None	None	no	yes	no	no	no	no	none	12.3	79	2.78	3.3	0.45	0.8	Overt hypothyroidism	2500-3000 gms	7	no	no	yes	yes	no	no	yes	none	21
32	Muddebihal	multigravida	37	no	None	None	no	yes	no	no	no	no	none	12	90.1	1.98	6.9	0.6	0.8	Overt hypothyroidism	.3000 gms	7	no	no	yes	yes	no	no	yes	none	13.8

31	Chadchan	primigravida	38	no	None	None	no	yes	no	no	no	no	none	13.4	89.6	1.77	4.5	0.43	1.1	Overt hypothyroidism	2500-3000 gms	7	no	no	yes	yes	no	no	yes	none	14.2
28	sindagi	multigravida	39	no	None	None	no	yes	no	no	no	no	none	14.3	78.6	2.16	3.45	0.35	0.9	Overt hypothyroidism	2500-3000 gms	7	no	no	yes	yes	no	no	yes	none	12.6
27	Bijapur	primigravida	41	no	None	None	no	yes	no	no	no	no	none	11.2	89.2	3.4	3.1	0.33	1.2	Overt hypothyroidism	2500-3000 gms	8	no	no	yes	yes	no	no	yes	none	9.8
25	Indi	multigravida	40	no	None	None	no	yes	no	no	no	no	none	12	85.4	4.12	11.2	0.67	0.8	Overt hypothyroidism	2500-3000 gms	6	no	no	yes	yes	no	no	yes	none	12.2
29	Devaripparagi	primigravida	40	no	None	None	no	yes	no	no	no	no	none	13.21	88.3	3.21	5.7	0.5	0.8	Overt hypothyroidism	>3000 gms	6	no	no	yes	yes	no	no	yes	none	15.6
31	Chadchan	primigravida	38	no	None	None	no	yes	no	no	no	no	none	12.23	79.4	2.66	8.9	0.54	0.7	Overt hypothyroidism	2500-3000 gms	7	no	no	yes	yes	no	no	yes	none	12.6
30	Bagalkot	primigravida	37	no	None	None	no	yes	no	no	no	no	none	10.9	88.6	2.7	6.7	0.24	0.8	Overt hypothyroidism	2500-3000 gms	7	no	no	yes	yes	no	no	yes	none	10.4
20	Indi	multigravida	39	no	None	None	no	yes	no	no	no	no	None	11.3	75.7	2.22	3.43	0.3	0.8	Overt hypothyroidism	2500-3000 gms	7	no	no	yes	yes	no	no	yes	none	13.2
32	Bagalkoy	multigravida	38	yes	None	None	no	no	no	no	no	yes	None	12.5	84.1	3.01	3.24	0.93	4	Subclinical hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	1.4
22	Vijayapura	primigravida	37	no	None	None	no	no	no	no	no	yes	None	11	81.5	1.56	12.88	1.3	2.1	Subclinical hypothyroidism	1000-1500 gms	6	yes	no	yes	no	no	no	no	none	1.4
32	Badami tq, Bagalkot	multigravida	38	yes	None	None	no	no	no	no	no	yes	None	12.5	84.1	3.01	3.24	0.93	4	Subclinical hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	1.4
28	Vijayapura	multigravida	37	no	None	None	no	no	no	yes	no	no	None	12.8	77.6	2.88	3.21	0.8	1.2	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	1.8
20	Sindagi, vijayapura	multigravida	42	no	None	None	no	no	yes	yes	no	no	None	9.6	68.7	3.73	4.3	0.7	0.8	Subclinical hypothyroidism	2000-2500 gms	7	yes	no	yes	no	no	no	yes	hypoglycemic convulsions	1.9
23	Vijayapura	primigravida	38	no	imminent eclampsia	None	no	no	no	no	no	no	None	12.6	89	1.92	4.322	1	0.8	Subclinical hypothyroidism	2000-2500 gms	0	yes	yes	yes	yes	no	no	no	none	9.2
26	Talikote	multigravida	38	no	None	None	no	no	no	yes	no	no	None	11	79	2.19	3.595	0.9	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	yes	no	no	no	RDS	1.6
20	Indi	primigravida	36	no	PE without severe features	None	no	no	no	no	no	yes	None	12.6	95.3	2.84	3.2	0.8	0.8	Subclinical hypothyroidism	1000-1500 gms	5	yes	no	yes	yes	no	no	no	none	1.6
33	Vijayapura	multigravida	30	no	PE with severe features	None	yes	yes	yes	no	no	no	None	7.5	67.1	2.05	3.158	0.8	7.6	Subclinical hypothyroidism	1000-1500 gms	7	no	no	yes	no	no	no	yes	none	9.7
27	Bonnanjogi	primigravida	40	no	None	None	no	no	yes	yes	no	no	None	10.5	70.6	3.78	4.623	0.9	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	7.8
20	Maralabhavi	multigravida	38	no	None	None	no	no	no	no	no	no	None	12.5	81.8	3.4	5.6	1.2	1	Subclinical hypothyroidism	more than 3000 gms	5	no	no	no	yes	no	no	no	none	2.1
23	Tikundi	primigravida	36	no	None	None	no	no	yes	no	no	yes	None	8.4	67.3	4.06	4.449	1.5	0.8	Subclinical hypothyroidism	1500-2000 gms	7	no	no	yes	no	no	no	no	none	3.4
19	Indi	primigravida	38	no	None	None	no	no	yes	no	no	no	Hiv positive	10.1	70.5	2.86	3.365	0.8	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	4.2
33	Bijapur	multigravida	37	no	None	None	no	no	no	no	no	no	none	13	90.7	2.72	3.69	0.8	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	14.2
24	Bijapur	multigravida	38	no	None	None	no	no	yes	yes	no	no	Rh negative status	7.2	57.6	3.39	3.476	0.8	0.8	Subclinical hypothyroidism	2000-2500 gms	7	yes	no	yes	no	no	no	no	none	4.6
24	Sindagi	primigravida	40	no	imminent eclampsia	None	no	no	no	no	no	yes	None	12.4	90.7	2.58	3.7	0.8	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	6.8
25	Bagewadi	multigravida	39	no	None	None	no	no	yes	yes	no	yes	Gestational thrombocytopenia	8.6	59.6	1.5	3.179	0.8	0.8	Subclinical hypothyroidism	2000-2500 gms	8	yes	no	yes	no	no	no	no	none	6.7
23	Bijapur	primigravida	29	no	imminent eclampsia	None	no	no	no	no	no	no	None	12.7	96.6	2.61	5.162	0.8	0.8	Subclinical hypothyroidism	1000-1500 gms	4	no	no	yes	yes	no	no	yes	none	12.4
26	Muddebihal	multigravida	40	no	None	None	no	no	no	no	no	yes	None	11.1	107.3	351	3.4	0.9	3.3	Subclinical hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	4.6
25	Indi	primigravida	30	no	None	None	no	yes	no	no	no	yes	None	12.4	92.5	2.89	6.6	0.8	0.8	Subclinical hypothyroidism	1000-1500 gms	6	no	no	yes	no	no	yes	no	none	7.8
23	Sindagi	primigravida	38	no	PE with severe features	None	no	no	yes	no	no	no	None	9.5	78.2	1.1	3.868	0.8	0.8	Subclinical hypothyroidism	2000-2500 gms	7	no	no	no	no	no	no	no	none	19
22	Indi	multigravida	39	no	None	None	yes	yes	yes	no	no	no	None	10	89	2.8	4.3	0.9	0.8	Subclinical hypothyroidism	2000-2500 gms	7	no	no	no	no	no	no	no	none	5.6
22	Indi	multigravida	40	yes	gestational hypertension	None	no	no	no	yes	no	no	None	13.2	86	2	4.6	0.8	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	7.8
29	Ronihal	multigravida	29	yes	PE with severe features	None	no	yes	no	no	no	no	None	12.8	77.6	1.21	3.39	0.7	1.01	Subclinical hypothyroidism	500-1000gms	4	no	no	yes	yes	no	no	yes	none	8.8
25	Bijapur	multigravida	39	no	None	None	no	no	no	no	no	no	None	12.2	86.5	2.1	6.148	0.9	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	11.3
25	Koppal	multigravida	37	no	None	None	no	no	no	yes	no	no	none	12.1	18.8	3.52	3.727	0.8	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	yes	no	no	none	11.5
19	Indi	primigravida	39	no	None	None	no	no	no	no	no	no	none	13.3	92.6	2.76	3.617	0.8	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	4.6

25	Bijapur	multigravida	39	no	PE without severe features	medically managed	no	no	no	no	no	no	None	12.3	88.5	2.18	6.148	0.8	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	medically managed	11.4
25	Gangawati	multigravida	37	no	None	None	no	no	no	yes	no	yes	None	12.1	18.8	3.52	3.727	0.8	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	7.8
28	Bijapur	multigravida	39	no	None	None	no	no	yes	yes	no	no	None	8.8	76.8	3.27	3.192	0.8	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	9.8
33	Bijapur	multigravida	38	no	None	none	no	no	no	yes	no	no	None	12.2	81.3	2.32	3.2	0.8	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	8.3
24	Bijapur	primigravida	40	no	None	None	no	no	yes	no	no	no	None	9.5	74.8	2.75	5.4	0.9	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	4.6
22	Athani	primigravida	38	no	eclampsia	None	no	no	yes	no	no	no	None	10.4	83.9	2.87	3.2	0.8	0.8	Subclinical hypothyroidism	2500-3000 gms	8	no	no	no	no	no	no	no	none	7.3
24	Indi	multigravida	39	no	None	None	no	no	no	no	no	no	None	12.9	90	2.46	6.58	0.8	0.8	Subclinical hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	8.3
24	Bagalkot	multigravida	29	no	PE with severe features	None	no	no	yes	no	no	no	Hypovolemic shock	3.6	69.9	1.3	13.841	0.7	0.8	Subclinical hypothyroidism	1000-1500 gms	4	no	yes	yes	yes	no	no	no	none	14.6
26	Bijapur	multigravida	29	no	eclampsia	None	no	no	no	no	no	no	none	12.5	83.6	1.4	3.537	0.8	0.8	Subclinical hypothyroidism	500-1000gms	4	no	no	yes	yes	no	yes	yes	none	12.7
34	Indi	multigravida	40	no	None	None	no	no	yes	no	no	no	None	8.7	73.6	2.92	4.668	0.8	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	9.8
25	Bijapur	multigravida	40	yes	None	both	no	no	no	yes	no	no	None	11	86.4	32.6	3.2	0.8	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	both	8.6
34	Bijapur	multigravida	37	yes	None	None	no	no	no	yes	no	no	None	12	89.8	2.34	4.6	0.9	122	Subclinical hypothyroidism	2000-2500 gms	7	yes	yes	yes	no	no	no	no	none	18.4
23	Bilagi	primigravida	40	no	None	None	no	no	no	no	no	no	None	12.4	100.4	2.69	3.042	0.8	0.8	Subclinical hypothyroidism	2500-3000 gms	6	no	no	no	no	yes	no	no	none	8.9
19	Bijapur	primigravida	38	no	None	None	no	no	yes	no	no	yes	None	10.3	64.9	1.75	4.34	0.6	0.8	Subclinical hypothyroidism	1500-2000 gms	0	yes	yes	yes	yes	no	no	no	none	13.6
25	bagewadi	multigravida	35	yes	None	None	no	yes	no	no	no	yes	None	11.9	93.5	2.5	4.34	0.5	0.8	Subclinical hypothyroidism	2000-2500 gms	7	no	no	yes	no	no	no	no	none	8.9
25	Bijapur	multigravida	34	no	PE with severe features	None	no	yes	no	no	no	yes	None	12.9	92.3	2.49	5.669	0.9	0.8	Subclinical hypothyroidism	1500-2000 gms	7	no	no	yes	no	no	no	no	none	13.6
24	Bijapur	multigravida	34	yes	PE with severe features	None	no	yes	yes	yes	no	no	None	8.9	79.3	1.43	8.3	1.6	147	Subclinical hypothyroidism	2000-2500 gms	7	no	no	yes	no	no	no	no	none	18.7
24	Bijapur	multigravida	35	no	None	None	no	no	yes	no	no	no	None	9.8	71.1	3.5	4.341	0.8	0.9	Subclinical hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	9.6
22	Bijapur	primigravida	35	no	PE with severe features	None	no	yes	no	no	no	no	None	11.1	85.8	2.72	8.656	0.9	0.8	Subclinical hypothyroidism	2000-2500 gms	7	no	no	yes	no	no	no	no	Pneumonia	9.7
24	Bijapur	multigravida	36	no	PE with severe features	None	no	yes	yes	no	no	no	Dengue	8.7	87.3	0.15	6.5	2.5	94.8	Subclinical hypothyroidism	2000-2500 gms	7	no	no	yes	no	yes	no	no	none	9.6
25	Bijapur	primigravida	34	no	eclampsia	None	no	yes	no	no	no	no	Rh negative	12.2	82	1.91	7.277	1.46	14.4	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	16.3
20	Muddebihal	primigravida	33	no	PE with severe features	None	no	yes	no	no	no	yes	None	11.7	78.6	2.87	7.5	0.8	0.8	Subclinical hypothyroidism	1500-2000 gms	6	no	no	yes	no	no	no	no	none	21
22	Sangli	multigravida	36	no	None	None	no	yes	yes	yes	no	no	Polyhydromnios	10.8	84.8	2.74	3.283	0.8	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	11.2
26	Bijapur	multigravida	38	no	None	None	no	no	yes	yes	no	no	None	7.4	78.9	0.85	5.6	0.8	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	6.5
25	Bijapur	primigravida	37	no	chronic hypertension	None	no	no	no	no	yes	no	None	11.1	92.3	1.78	3.4	0.8	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	7.9
25	Jamkandi	primigravida	40	no	PE with severe features	None	no	no	no	no	no	yes	None	12.7	90.4	1.64	4.018	0.8	0.8	Subclinical hypothyroidism	2000-2500 gms	6	no	no	yes	no	no	no	no	RDS	9.8
26	Bijapur	primigravida	39	no	None	None	no	no	yes	no	no	no	None	8.8	62.3	3.94	4.331	0.8	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	7.6
26	Sindagi	multigravida	38	no	None	None	no	no	yes	no	no	no	None	7.5	64.1	2.81	3.84	0.8	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	7.3
25	Bijapur	multigravida	40	no	None	None	no	no	yes	no	no	no	None	9.8	77.3	1.95	3.229	0.8	0.8	Subclinical hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	7.6
25	Muddebihal	multigravida	38	no	PE with severe features	None	yes	no	yes	no	no	no	None	5.2	104	1.23	20.418	0.9	0.8	Subclinical hypothyroidism	1500-2000 gms	6	yes	no	yes	no	no	no	no	MAS	9.23
28	Gulbarga	multigravida	32	no	eclampsia	None	no	no	no	yes	no	no	None	16.6	94.6	0.99	4.3	1.8	0.8	Subclinical hypothyroidism	1000-1500 gms	5	yes	no	yes	yes	no	yes	yes	none	8.7
22	Bagewadi	multigravida	40	no	None	None	no	no	no	no	no	no	None	11.3	87.i	2.32	5.614	0.8	0.8	Subclinical hypothyroidism	more than 3000 gms	8	no	no	no	no	yes	no	no	none	9.9
29	Devaripparigi	multigravida	31	yes	None	None	no	yes	no	no	no	no	None	12.3	91.4	2.2	4.3	1.3	0.8	Subclinical hypothyroidism	1000-1500 gms	6	no	no	yes	no	no	no	no	none	7.1
22	Bijapur	multigravida	33	no	None	medically managed	no	yes	yes	no	no	no	Gestational thrombocytopenia	5.5	112.9	0.41	6.519	1.3	0.8	Subclinical hypothyroidism	1500-2000 gms	7	no	no	yes	no	no	no	no	medically managed	10.2
21	Jamkandi	primigravida	38	no	PE with severe features	None	no	no	no	no	no	no	Hellp syndrome	11.3	92.1	0.62	3.2	0.8	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	4.2

22	Jamkandi	multigravida	41	no	None	None	no	no	no	no	no	no	none	13.5	82.9	2.68	3.209	1.2	112	Subclinical hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	4.3
21	Bijapur	multigravida	39	no	None	None	no	no	no	no	no	no	None	12.1	87.4	2.66	6.294	0.8	0.8	Subclinical hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	9.6
28	Indi	multigravida	38	no	PE without severe features	None	no	no	no	yes	no	no	None	13.8	90	2.78	3.15	0.8	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	8.7
22	Indi	multigravida	40	no	None	None	no	no	no	no	no	no	None	12.7	84.3	2.41	4.894	1.2	0.6	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	11.2
24	Bijapur	multigravida	41	no	None	None	no	no	yes	yes	no	no	Gestational thrombocytopenia	10.7	80.4	0.44	5.099	0.9	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	8.12
24	Bijapur	multigravida	37	no	None	None	no	no	no	no	no	no	none	12.6	84.3	1.72	3.6	0.9	0.8	Subclinical hypothyroidism	2000-2500 gms	7	yes	no	yes	no	no	no	no	none	8.3
19	Devaripparigi	primigravida	39	no	eclampsia	medically managed	no	no	yes	no	no	no	None	9.3	90.2	1.21	3.38	1.4	2.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	Cleft lip	9.7
25	Athani	multigravida	31	no	PE with severe features	None	yes	yes	yes	no	no	no	None	9.2	79.1	4.98	3.74	1.2	0.8	Subclinical hypothyroidism	1000-1500 gms	0	no	yes	yes	yes	no	no	no	none	11.4
25	Indi	multigravida	39	yes	PE without severe features	None	no	no	no	yes	no	no	None	14.9	78.1	0.96	4.019	0.7	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	yes	no	no	none	10.8
20	Bijapur	primigravida	40	no	None	None	no	no	no	no	no	no	None	12.3	91.1	3.05	7.446	0.9	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	8.6
26	Indi	multigravida	39	yes	PE without severe features	None	no	no	no	yes	no	no	None	12.7	82	2.09	4.3	1	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	9.9
21	Kalburgi	primigravida	38	yes	None	None	no	no	no	no	no	no	None	12.1	92.1	3.2	5.02	0.8	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	4.2
29	Muddebihal	primigravida	36	no	None	medically managed	no	yes	yes	no	no	no	None	10.4	80	1.48	10.393	1.2	0.8	Subclinical hypothyroidism	2000-2500 gms	6	yes	no	yes	no	no	no	no	medically managed	9.6
29	Bijapur	multigravida	30	yes	None	None	no	yes	no	no	no	no	None	11.8	93.6	1.37	3.72	0.8	0.8	Subclinical hypothyroidism	1000-1500 gms	6	no	no	yes	no	no	no	no	none	14.3
20	Bijapur	multigravida	39	no	None	None	no	no	no	no	no	no	None	12.2	87.1	1.51	4.681	0.8	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	yes	no	no	none	5.6
20	Inchageri	primigravida	31	no	eclampsia	None	no	yes	no	no	no	no	None	12.3	74.6	2.94	4.108	0.9	141.6	Subclinical hypothyroidism	500-1000gms	3	no	no	yes	yes	no	yes	yes	none	10.2
23	Hebbal	multigravida	36	no	None	None	no	yes	yes	no	no	no	None	10.9	88.7	2.18	4.32	0.8	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	9.9
20	Talikote	primigravida	36	no	eclampsia	None	no	yes	no	no	no	no	None	12.9	85.1	3.72	5.927	0.8	0.8	Subclinical hypothyroidism	2500-3000 gms	6	no	no	no	no	no	no	no	none	11.2
21	Bijapur	primigravida	32	no	None	None	no	yes	no	no	no	no	None	12.2	80.5	1.83	3.2	0.8	0.8	Subclinical hypothyroidism	1500-2000 gms	7	no	no	yes	no	no	no	no	none	7.2
34	Bijapur	multigravida	35	yes	None	None	no	yes	yes	no	no	no	None	10.6	78.9	3.04	3.45	2.1	0.9	Subclinical hypothyroidism	2000-2500 gms	7	no	no	yes	no	no	no	no	none	5.7
31	Bijapur	multigravida	35	yes	None	None	no	no	no	no	no	no	None	11.3	98.5	1.53	4.2	2.3	91	Subclinical hypothyroidism	2000-2500 gms	7	no	no	yes	no	no	no	no	none	9.4
27	Bijapur	primigravida	38	yes	None	None	no	no	yes	no	no	no	None	10.6	80.2	5.05	2.403	1.2	0.9	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	yes	no	no	none	8.8
22	Bijapur	primigravida	41	no	None	None	no	no	no	no	no	no	None	12.5	91.2	2.71	4.428	0.8	0.8	Subclinical hypothyroidism	more than 3000 gms	7	no	no	no	no	no	no	no	none	7.2
25	Indi	multigravida	39	yes	None	None	no	no	no	no	no	no	None	14.2	81.3	3.05	3.02	0.8	0.8	Subclinical hypothyroidism	2000-2500 gms	7	yes	no	yes	no	no	no	no	none	13.6
30	Bijapur	multigravida	36	yes	None	None	no	yes	no	yes	no	no	Epilepsy	11.5	90.4	2.17	2.585	0.8	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	9.7
22	Bijapur	multigravida	33	no	None	None	no	yes	no	no	no	yes	none	11.5	87.6	3.13	4.984	0.8	0.8	Subclinical hypothyroidism	1500-2000 gms	7	no	no	yes	no	no	no	no	none	8.6
26	Indi	primigravida	33	no	PE with severe features	None	yes	yes	yes	no	no	no	none	10.6	86.3	0.32	3.329	0.8	0.8	Subclinical hypothyroidism	1500-2000 gms	7	no	no	yes	no	no	no	no	none	8.6
25	Afzalpur	multigravida	40	no	None	None	no	no	no	yes	no	no	None	12.3	89.7	2.45	4.129	0.8	0.8	Subclinical hypothyroidism	2000-2500 gms	6	yes	no	yes	no	no	no	no	none	14
28	Bijapur	multigravida	37	no	None	None	no	no	no	no	no	yes	None	11.7	80.7	2.92	4.041	0.8	1.3	Subclinical hypothyroidism	2000-2500 gms	7	yes	no	yes	no	no	no	no	none	13.4
34	Huvinhipparigi	multigravida	39	yes	None	None	no	no	no	no	no	no	None	12.4	91.3	2.59	90.91	0.8	3.11	Subclinical hypothyroidism	more than 3000 gms	7	no	no	no	no	yes	no	no	none	15.53
22	Bagewadi	primigravida	37	no	eclampsia	None	no	no	no	no	no	no	None	12.9	81.5	3.66	3.043	1	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	10
26	Devaripparigi	multigravida	38	yes	None	None	no	no	no	yes	no	no	None	12.1	87	2.41	9.59	1	0.8	Subclinical hypothyroidism	more than 3000 gms	6	no	no	no	no	no	no	no	RDS	13
28	Indi	multigravida	38	no	PE without severe features	None	no	no	no	yes	no	no	None	13.8	90.6	2.78	3.1	1.2	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	9
25	Sindagi	primigravida	39	no	None	None	no	no	no	no	no	no	None	13.3	85.7	2.92	4.518	1.6	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	13.7
20	Muddebihal	primigravida	38	no	eclampsia	None	no	no	no	no	no	no	None	11.9	82.8	1.44	5.755	0.8	0.8	Subclinical hypothyroidism	1500-2000 gms	7	yes	no	yes	no	no	no	no	RDS	7.9

20	Indi	primigravida	37	no	None	None	no	no	yes	no	no	no	None	9.8	65.3	3.32	4.738	0.8	0.8	Subclinical hypothyroidism	1500-2000 gms	7	yes	no	yes	no	yes	no	no	none	16.1
21	Indi	multigravida	42	no	PE without severe features	None	no	no	no	yes	no	no	None	12.2	85.1	1.95	4.9	0.8	0.8	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	6.5
22	Bijapur	multigravida	38	no	PE with severe features	none	no	no	no	no	no	no	None	11.1	92	1.97	4.2	0.8	0.2	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	12.2
22	Bagewadi	primigravida	37	no	none	none	no	no	no	no	no	no	None	10.9	89.2	1.56	3.6	0.8	0.2	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	12.2
24	Jamkandi	multigravida	39	no	none	none	no	no	no	no	no	no	None	11.2	90	2.31	3.1	0.8	0.2	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	12.2
21	Indi	multigravida	38	no	none	none	no	no	no	no	no	no	None	11.3	88.7	1.88	3.6	0.8	0.2	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	12.2
34	Bijapur	primigravida	40	no	none	none	no	no	no	no	no	no	None	11.1	89.2	2.8	4.5	0.8	0.2	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	12.2
30	Devaripparagi	primigravida	39	yes	none	none	no	no	no	no	no	no	None	11	89.6	2.99	5.8	0.8	0.2	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	12.2
22	Bagewadi	multigravida	39	no	none	none	no	no	no	no	no	no	None	12.4	90.5	3.22	3.23	0.8	0.2	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	12.2
21	Bijapur	multigravida	41	yes	gestational hypertension	none	no	no	no	no	no	no	None	12.6	91	3.45	3.8	0.8	0.2	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	12.2
23	Huvinhipparigi	multigravida	40	no	none	none	no	no	no	no	no	no	None	12.2	88.6	2.36	3.98	0.8	0.2	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	12.2
25	Bijapur	primigravida	37	yes	none	none	no	no	yes	no	no	no	None	10.2	88	1.75	4.1	0.8	0.2	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	12.2
29	Sindagi	primigravida	37	no	none	none	no	no	yes	no	no	no	None	10.8	92	1.89	5.1	0.8	0.2	Subclinical hypothyroidism	2500-3000 gms	7	no	no	no	no	no	no	no	none	12.2
25	Indi	multigravida	39	no	None	None	no	no	yes	no	no	no	none	10.7	83	2.37	0.25	not done	not done	No hypothyroidism	more than 3000 gms	8	no	no	no	no	no	no	no	none	not done

Thesis

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