AN ANALYSIS OF INTRA UTERINE FOETAL DEMISE IN A TERITARY CARE HOSPITAL

By

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Under the Guidance of

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BACKGROUND: Intrauterine foetal demise or Still birth refers to an antepartum or intrapartum foetal death occurring after 28 weeks of gestation. The majority of these deaths would probably be prevented with better access to expert healthcare and providing health education to the women.

AIMS: To find out the associated risk factors for antepartum intra uterine foetal demise and determine the probable cause of antepartum foetal demise

MATERIALAR METHODS: This is a prospective study conducted at R.L. JALAPPA Hospital attached to Sri Devaraj Urs Medical College, Tamaka, Kolar included all antepartum intrauterine foetal demises after 24 weeks of gestation between January 2021 to December 2022.

RESULTS:

In the maternal causes of IUFD, hypertensive disorders contributed to 46.85% followed by anemia. Fetal growth restriction seen in 24.6%. In placental causes abruptio placenta accounted for 17.23%, idiopathic was 26.7%.

CONCLUSION:

Present study showed that majority of IUDs were preventable. Pre-eclampsia and abruption which are the major causes of IUD can be reduced by improving the socio economic status of people, proper antenatal care and timely admission of the patient, thorough monitoring and timely intervention.

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BACKGROUND: Intrauterine fetal demise or Still birth refers to an antepartum or intrapartum fetal death occurring after 20 weeks of gestation. The majority of these deaths would probably be prevented with better access to expert healthcare and providing health education to the women. AIMS: To find out the associated risk factors for antepartum intra uterine fetal demise and determine the probable cause of antepartum fetal demise MATERIALS& METHODS: This is a prospective study conducted at R.L JALAPPA Hospital attached to Sri Devaraj Urs Medical College, Tamaka, Kolar included all antepartum intrauterine fetal demises after 24 weeks of gestation between January 2021 to December 2022. RESULTS: In the maternal causes of IUFD, hypertensive disorders contributed to 46.65% followed by anemia. Fetal growth restriction seen in 26.6%. In placental causes abruptio placenta accounted for 15.23%. idiopathic was 26.7%. CONCLUSION: Present study showed that majority of IUDs were preventable. Pre-eclampsia and abruption which are the major causes of IUD can be reduced by improving the socio-economic status of people, proper antenatal care and timely admission of the patient, thorough monitoring and timely intervention. 3 1 INTRODUCTION: Introduction: Due to the challenge of establishing causation, there are global data on the causes of st.illbirth.1 The most often documented cause, which is reported in 76% of instances worldwide, is an unexplained stillbirth. 2 The majority of such deaths would probably be prevented with better access to expert healthcare; however, intrapartum problems are responsible for SO% of stillbirths worldwide. 3 Over 2.6 million pregnancies worldwide, or 18.4/1000 live births, occur in third- trimester stillbirths each year. 3 The stillbirth rate had decreased more slowly during the preceding few decades, despite improvements in neonatal and infant mortality. For deaths that occur in the USA between 22 weeks of pregnancy and one year of age, fetal fatalities between 22 and 27 weeks of gestation account for 25.2%, fetal deaths between 28 weeks of gestation and birth for 24.5%, neonatal deaths under 28 days for 33.8%, and deaths between 28 days and one year for 16.1%. 4 In the US, the stillbi.rth rate exceeded the infant death rate in 2013.5 According to estimates from 201S, there are 23,595 stillbirths in the USA per year or roughly I in 168 pregnancies.6 Since 2006, the stillbirth rate has stayed constant at S.96/1000 live births in the US. 4 The total births are higher than those of other developed nations like France (3.87/1000) and Sweden (3/1000), which are also industrialized. In high-income nations, the ratio of stillbirths to live bi.rths ranges from 1.3 to 8.8. 40/1000 stillbi.rths occur in Pakistan and Nigeria. 7 An estimated 6 lakh stillbirths take place in India each year. According to estimates by Lancet (20 I I), there are significant interstate variations in the current stillbirth 2 rate, which is 22 per 1000 live births. 3 51 33 syndrome, cholestasis, hypertensive condition, infections, vascular diseases, severe anemia, and cyanotic heart disorder. Some of the prenatal risk factors include post-maturity, congenital abnormality, fetal growth restrictions (FGR), coagulation problems, as well as genetic abnormalities. Abruption, abnormalities in the chord, and real knots in the cord are all examples of placental reasons for intrauterine fetal loss. In addition to major maternal problems such as disseminated intravascular coagulation, placental abruption hemorrhage, septicemia, and shock, the mother's psychological state may be greatly impacted, most typically by postpartum psychosis and depression.9 Families with known inherited disorders can get counseling regarding reproductive alternatives, such as prenatal and preimplantation genetic diagnostics. Counseling on quitting

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DR. NANDINI BHAVANAM

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LIST OF ABBREVIATIONS

GLOSSARY	ABBREVIATIONS
CDC	Center for Disease Control and Prevention
DIC	Disseminated intravascular coagulation
IUFD	Intra-Uterine Fetal Death
HELLP	Hemolysis elevated liver enzymes low platelet count
BMI	Body Mass Index
LSCS	Lower segment Caesarean section
LBW	Low birth weight
MVM	Maternal vascular malperfusion
FVM	Fetovascular malperfusion
Hb	Haemoglobin
T1DM	Type 1 Diabetes mellitus
HCA	Histological chorioamnionitis
PTB	Preterm birth

ABSTRACT

BACKGROUND: Intrauterine fetal demise or Still birth refers to an antepartum or intrapartum fetal death occurring after 20 weeks of gestation. The majority of these deaths would probably be prevented with better access to expert healthcare and providing health education to the women.

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In the maternal causes of IUFD, hypertensive disorders contributed to 46.65% followed by anemia. Fetal growth restriction seen in 26.6%. In placental causes abruptio placenta accounted for 15.23% and idiopathic was 26.7%.

CONCLUSION:

In the present study preeclampsia and eclampsia were the main contributor for antepartum intrauterine foetal demise followed by anaemia and abruptio placenta. Statistically significant difference was found between birth weight and gestational age, attributing to the foetal growth restriction. Decreased perception of foetal movements was seen in majority of the cases. Good antenatal care and detection of risk factors like preeclampsia, anemia, FGR, congenital malformations, etc are necessary to plan the next level of management.

INTRODUCTION

Due to the challenge of establishing causation, there are global data on the causes of stillbirth. [1] The most often documented cause, which is reported in 76% of instances worldwide, is an unexplained stillbirth. [2] The majority of these deaths would probably be prevented with better access to expert healthcare; however, intrapartum problems are responsible for 50% of stillbirths worldwide. [3]

Over 2.6 million pregnancies worldwide, or 18.4/1000 live births, occur in third-trimester stillbirths each year. [3] The stillbirth rate had decreased more slowly during the preceding few decades, despite improvements in neonatal and infant mortality. For deaths that occur in the USA between 22 weeks of pregnancy and one year of age, fetal deaths between 22 and 27 weeks of gestation account for 25.2%, fetal deaths between 28 weeks of gestation and birth for 24.5%, neonatal deaths under 28 days for 33.8%, and deaths between 28 days and one year of age for 16.1%. [4]

In the USA, the stillbirth rate exceeded the infant death rate in 2013.[5] According to estimates from 2015, there are 23,595 stillbirths in the USA per year, or roughly 1 in 168 pregnancies.[6] Since 2006, the stillbirth rate in the USA has stayed constant at 5.96/1000 live births. [4] The total births are higher than those of other developed nations like France (3.87/1000) and Sweden (3/1000), which are also industrialized.In high-income nations, the ratio of stillbirths to live births ranges from 1.3 to 8.8. 40/1000 stillbirths occur in Pakistan and Nigeria.[7] An estimated 6 lakh stillbirths take place in India each year. According to estimates by Lancet (2011), there are significant interstate variations in the current stillbirth rate, which is 22 per 1000 live births.

The WHO definition released in 1950 served as the foundation for the CDC's definition of "fetal death." It defines "fetal death" as the death of a result of human conception before it is completely expelled from its mother, regardless of the length of pregnancy and which is not an artificial termination of pregnancy. Fetal demise, according to the "American College of Obstetricians and Gynecologists", is the death of a fetus after 20 weeks of gestation or when it weighs 500 g or more. [8] Antepartum and intrapartum fetal deaths make up the greatest subgroup of perinatal mortality globally.

A significant obstetrical complication that can be devastating for parents and obstetricians alike is intrauterine fetal mortality. Finding the causes of IUFD will enable the development of a successful prevention strategy, preventing maternal problems in the process. Intrauterine fetal mortality is a crucial sign of a population's maternal and neonatal health. Obstetricians have traditionally had trouble treating stillbirths. In the last 50 years, antenatal care has changed in style. In the past few decades, antepartum and intrapartum monitoring for the health of the fetus has improved. Poor obstetrical outcomes are caused by a variety of maternal disorders and illnesses. The value of prenatal and intranatal care can be evaluated using the index of stillbirth. The high-risk instances linked to poor outcomes can be recognized by appropriate prenatal examinations.

The most common cause of fetal mortality includes maternal causes (25-35%), fetal causes (25-40%), placental reasons (5-10%), and unknown causes (25-35%).

The following conditions may all be included as maternal risk factors for intrauterine fetal death (IUFD): isoimmunization, antiphospholipid antibody syndrome, hypertensive disorders, cholestasis, vascular illnesses, infections, cyanotic heart disease, and severe anemia. Some of the prenatal risk factors include post-maturity, congenital

abnormality, fetal growth restrictions (FGR), coagulation problems, as well as genetic abnormalities.

Abruption, abnormalities in the cord, and true knots in the cord are all examples of placental causes of intrauterine fetal death. In addition to major maternal problems like placental abruption hemorrhage, disseminated intravascular coagulation, shock, and septicemia, the mother's psychological state may be greatly impacted, most typically by depression and postpartum psychosis.[9]

Families with known genetic disorders may get counseling regarding reproductive alternatives, such as prenatal and preimplantation genetic diagnostics. Counseling on quitting smoking and weight loss in obese women may help lower the number of stillbirths. For patients whose previous pregnancies ended in fetal mortality, antenatal surveillance is generally advised. But with more recent innovations like color doppler, fetal karyotyping, placental assessment, and effective prenatal screening, it is possible to significantly reduce the rate of intrauterine fetal mortality.[9] In the analysis, the most prevalent risk indicators for intrauterine fetal mortality were studied, along with screening and detection of moribund situations, knowledge of preventive risk factors, and a decrease in the psychosocial effects on mothers.

NEED OF THE STUDY

In many underdeveloped nations, the incidence of IUFD is 10 times higher than in industrialized nations. In many parts of the globe, accurate information regarding causes and rates is not available. Although it is estimated that underdeveloped nations account for more than 98 percent of all IUFDs worldwide, little study, programming, or policy attention has been paid to this issue. Around 50% deliveries performed at home in many poor nations, and underreporting of IUFDs is a serious issue. Several social, fetal, maternal, and environmental variables as well as circumstances have a role in the fatalities. Determining the reason of fetal death helps in maternal coping and assuages any perceived guilt, permits more accurate counseling regarding recurrence risk, and may prompt therapy or intervention to prevent an IUFD in subsequent pregnancies. This study is intended to conduct in rural referral hospital to find out the prevalence and cause of intrauterine fetal demise. Our hospital being a tertiary care focus have insights of intrauterine fetal demise which represents certain pace of perinatal morbidity and mortality, it's the motivation behind why this study was picked to dissect the most well-known risk factors for intrauterine fetal demise, consequently screening and recognition of the moribund conditions and to know the preventable risk factors and further more decline the psychosocial implications on mother.

AIMS AND OBJECTIVES

1. To determine the associated risk factors for antepartum intra uterine fetal demise

2. To determine the probable cause of antepartum fetal demise

REVIEW OF LITERATURE

When a fetus dies at a specific gestational weight or age, which historically lacked consistency, it is referred to as a "stillbirth". The definition of stillbirth that is most often used is a fetal death that occurs at or after 20 weeks of gestation or at a birth weight of 350g or greater. When creating therapies, understanding the reasons of stillbirth is crucial.[10] Classification issues caused by the need to distinguish between causes and relationships are evidenced by the existence of more than 40 different classification systems at this time. [11] The system that is frequently considered in low- as well as middle-middle income nations worked poorly, according to an analysis of relative usefulness, whereas the more dependable systems were designed for high-income nations and depends heavily on the modern diagnostics that are not available in settings with a high prevalence. 10 Within three weeks of the diagnosis, more than 85% of women with an IUFD naturally give birth. [12] The risk of complications with expectant management for the first 48 hours is low if the mother-to-be is in excellent health, her membranes are intact, and there is no sign of pre-eclampsia, infection, or bleeding. [12] Within four weeks following the date of the death of the foetus, there is a 10% risk that the mother would have disseminated intravascular coagulation (DIC), and the likelihood grows from there.[12]

Although vaginal delivery is the preferred method for IUFD, there are some circumstances where a caesarean section is required. Intrapartum difficulties, high blood pressure, diabetes, infection, congenital and genetic abnormalities, placental failure, and pregnancies that last longer than 40 weeks are a few of the causes of stillbirth. The mechanism of fetal death is now only partially understood.

Maternal complications

Up to five times more women with diabetes experience stillbirths. [16] Diabetes may have an impact on the newborn's birth weight, which is also linked to the possibility of a stillbirth. If the birth weight exceeded the 95th percentile in a person with type 2 diabetes, the risk of stillbirth was increased threefold. Women with type 2 diabetes had a much higher percentage of male-born stillbirths. Term delivery accounts for one-third of diabetes-related stillbirths. For women with type 1 diabetes and type 2 diabetes, the maximum stillbirth rate occurs in the 38th and 39th weeks, respectively.[17]

In comparison to other racial groupings, black non-Hispanic women in the U.S. experience a higher stillbirth rate (11 per 1000 births). The increased incidence of diabetes, hypertension, preterm membrane rupture, and abruption in this group may contribute to the greater stillbirth rate.[18]

Even after taking into account factors such as gestational diabetes, smoking, diabetes, and preeclampsia, obesity remains a risk factor for stillbirth. A body mass index of more than 30 kg/m2 is considered obese and is a serious health issue in developed nations. The risk of stillbirth in nonobese women is 5.5 per 1000. Risk levels are 8 per 1000 for BMIs between 30 and 39.9 kg/m2 and 11 per 1000 for BMIs above 40 kg/m^2.[19]

Due to an increased risk for aneuploidy and pregnancy-related medical problems, older maternal age increases the risk of stillbirth. Even after adjusting for these risk factors, mothers over the age of 35 still have a higher chance of stillbirth, which is exacerbated by nulliparity. For a nullipara at age 40, the probability is 1/116, and

for a multipara, it is 1/304. [20] Lethal chromosomal abnormalities, which are more common in pregnant women older than 35, can result in stillbirth.[21]

Smoking can increase both antepartum and intrapartum stillbirth risk (15/1000). Quitting smoking at the start of the second trimester, the risk will be the same as a nonsmoker's. [22] Active smoking is linked to a 1.44 chances ratio for experiencing one or more stillbirths as compared to never smoking.

Drug misuse is linked to an increased chance of stillbirth due to vasoconstriction, placental dysfunction, hypoxia, and alterations in endogenous hormones that regulate good health. [23]

Having chronic hypertension triples the risk of stillbirth.[13] The incidence of hypertension, which can affect pregnancy, is 9.6% (95% CI: 6.9-12.1).[24] At this point, nothing is known about the objectives and results of treating chronic hypertension in pregnancy.[25] In certain reports, gestational hypertension raises the chance of stillbirth in some people, but not in others.[26]

Since 1984, stillbirth has also been connected to thrombotic events and antiphospholipid syndrome (APS).[27] Women with APS who have a history of systemic lupus erythematosus, thromboses, past pregnancies that ended poorly, and low complement levels in the first trimester are at an elevated risk for pregnancy morbidity.[28] Systemic lupus erythematosus patients should be evaluated for antiphospholipid antibodies during pregnancy and treated to prevent unfavorable pregnancy outcomes since they have a 15% to 25% risk of stillbirth.

0.1% to 2% of expectant mothers may have intrahepatic cholestasis. Pregnancies complicated by cholestasis have been linked to cases of fetal arrhythmias. The

majority of these stillbirths have acute anoxia symptoms, but neither development inhibition or chronic uteroplacental impairment. [29]

Their risk of stillbirth is not raised since most women will have bile acids less than 100 micromol/L.[30] Bile acid content should be checked frequently because it might change quickly in late pregnancy.[31] Testing can be done either while fasting or postprandially since, despite the possibility of higher bile acids, median levels are comparable. [30] Future research is necessary to determine whether ursodeoxycholic acid therapy lowers the chance of stillbirth.

The chance of stillbirth rises with early and late-term gestation. The risk of cesarean delivery and stillbirth may be reduced if labor is induced beyond 40 weeks. [32] At 37 weeks, the stillbirth risk is 0.21 per 1000. In expectantly managed pregnancies, the risk of still birth is equivalent to that of induced deliveries at 38 weeks. At 42 weeks the likelihood of a stillbirth at 42 weeks is 1.08/1000. Other considerations, such as maternal and neonatal unfavorable outcomes, must be considered when assessing the advantage of inducing labor to minimize stillbirth.

1% to 2% of pregnancies are complicated with polyhydramnios. It is indicated by a deepest vertical fluid pocket that is at least 8 cm deep or an amniotic fluid index of more than 24 cm, as evaluated by abdominal ultrasonography. Idiopathic causes account for 50% of polyhydramnios cases. Fetal macrosomia risk is elevated in these situations, and the relative chance of stillbirth is increased two to five times.[33] Additionally, polyhydramnios is linked to maternal diseases like diabetes, infection, and diabetes insipidus linked to lithium usage, as well as congenital malformations of the central nervous system, gastrointestinal system, cardiac system, hydrops, and aneuploidy.

Oligohydramnios is linked to increased risk of stillbirth and small for gestational age fetuses. The risk is 11.54 (95% CI: 4.05-32.9) for stillbirth.[34] Delivery for oligohydramnios can be recommended at 36–37 weeks gestation, if no other comorbidities are discovered, or earlier if fetal monitoring is non reassuring. Pregnancies with idiopathic oligohydramnios at term have similar results to pregnancies with a normal amniotic fluid content when there are no other risk factors present.[35]

Even though a nuchal cord may be present in up to 30% of normal deliveries, the umbilical cord may be linked to stillbirth. Its critical to assess any signs of obstruction or circulatory impairment while figuring out the cause of stillbirth. Prior home deliveries and late-onset prenatal care are separate risk factors for later poor perinatal outcomes. [36]

The stillbirth rate increases by four times (19.6/1000) for twin pregnancies, and the rate is even greater for higher-order multiples (30/1000). [37] Growth restriction, premature birth, fetal abnormalities, advanced mother age, and twin-twin transfusion syndrome are a few possible contributing factors. The cord entanglement possibility increases the chance of stillbirth in monochorionic twins. Although they did not achieve statistical significance, gestational diabetes, gestational hypertension, and rhesus vaccination all exhibited greater odds of stillbirth. [26]

Escherichia coli made up 29% of the bacteria that were cultivated, followed by group B streptococcus (GBS), 12%, enterococcus, 12%, and Listeria monocytogenes, which was only sometimes present. In 99% of cases when a culture was positive, placental examination revealed signs of infection.

Cytomegalovirus, parvovirus, syphilis, and herpes simplex virus were among the non-bacterial agents responsible for stillbirth, each accounting for 2% of cases. A stillbirth is not likely to have been caused by infection if significant postmortem or placental findings are lacking. Serologic screening for toxoplasmosis, chlamydia, rubella, or herpes is normally not advised when these diseases are not found on placental or autopsy examination. [38]

Infection with Group B Streptococcal is responsible for 1% of stillbirths in affluent nations and 4% of stillbirths in African nations. A high rate of screening may have contributed to Mozambique's 17% stillbirth rate that was linked to group B streptococcal infection. [39]

Fetal complications

Congenital malformations, which are biological or physical anomalies, affect one in every 33 pregnancies and increase the risk of stillbirth. Congenital defect diagnosis during pregnancy may affect antenatal surveillance practices in an effort to lower the incidence of stillbirth. Even isolated congenital anomalies not impacting major organs still have the risk of stillbirth; the risk is 11/1000 for bladder exstrophy and 490/1000 for the limb-body-wall complex.[11]

Placental complications

The most typical stillbirth results include placental abnormalities and fetal development limitation. However, the majority of pregnancies with these findings do not end in stillbirth.[13] Even in stillbirths without obvious signs of growth impairment, placental anomalies can be discovered. To assess the placenta's structure and function without causing harm, new techniques are required. Growth

restriction is 30% in cases where the birth weight is below the 10th percentile and 70% in cases where it is below the third percentile. [14] The consumption of cocaine, smoking, hypertension, and preeclampsia increases the chances of placental still birth and abruption. The chance of stillbirth is further increased by uncommon placental diseases such choriocarcinoma or chorioangioma.[15]

Pathophysiology:

Numerous factors affect a fetus's ability to survive in the womb. These variables fall into four categories; the health of the host in its surroundings, the functioning of the uteroplacental unit, the environmental condition in which the fetus lives, and the lack of fatal elements in the fetus. A still birth may occur when these life-sustaining elements are unable to function properly dur to a single or a combination of factors. To support and maintain a pregnancy several physiologic, hormonal, and anatomical modifications are needed. [40]

The uteroplacental unit integrity may be jeopardized by defects in its functioning, structure or genetic factors, as well as by infection or hemorrhage. Placental outcomes could include 1) single umbilical cord insertion, 2) velamentous umbilical cord insertion, 3) furcate umbilical cord insertion, 4) circummarginate insertion of the placental membranes, 5) circumvallate insertion of the placental membranes, 6) terminal villous immaturity, 7) terminal villous hypoplasia, 8) terminal villous hyperplasia, 9) acute chorioamnionitis of placental membranes, 10) acute chorioamnionitis of the chorionic plate, 11) acute umbilical cord arteritis, 12) acute umbilical cord phlebitis, 13) chorionic plate acute vasculitis of the fetal blood vessels, 14) chorionic plate vascular degenerative changes, 15) acute villitis,

16) chronic villitis, 17) avascular villi, 18) retroplacental hematoma, 19) parenchymal infarction, 20) intraparenchymal (intervillous) thrombosis, and 21) perivillous fibrin deposition, 22) intervillous fibrin deposition, 23) placental weight, 24) ratio placental weight/birth weight.[40]

Evaluation:

Placenta Microscopic Evaluation

Take blocks of 1 × 1 cm from the placenta's four different places. The maternal side of the placenta should be up when collecting the samples, and the samples should not be fixed.

Autopsy:

Discussing a stillborn autopsy may be challenging for some patients and caretakers. You need written permission to perform an autopsy. Foetal tissue is not regarded as a part of the conceiving person's product after 20 weeks of gestation, therefore insurance may not pay for its testing. In 46% of cases, a stillbirth's cause can be determined through an autopsy, and in 51% of cases, it can reveal brand-new information. [41]

Imaging:

It is possible to use a variety of imaging techniques to assess the cause of a stillbirth. An infantogram is an anterior-posterior and lateral X-ray of the entire fetus. A thorough skeletal survey should be carried out if an ultrasound or physical examination point to a skeletal issue. A computed tomography (CT) scan is advised for evaluating skeletal anomalies and ectopic calcifications. Similar to an autopsy,

magnetic resonance imaging (MRI) can be used to examine internal organs and identify abnormalities. [42]

Chromosomal Study:

To validate or identify the reason for the stillbirth, access to chromosomal testing for aneuploidy should be made available for all stillbirths. The mother's insurance may not pay for the assessment "fetal tissue" if she is more than 20 weeks pregnant because it is no longer regarded as a product of conception. The maximum yield (80%–100%) for effective cytogenetic analysis is provided by genetic amniocentesis or chorionic villus sampling before delivery. [43] The umbilical cord or placenta provides the highest yield, whereas success rates from tissue retrieved after birth are substantially lower (10% to 30%) due to autolysis.

Lab Testing:

Each patient must have a complete blood count (CBC), a glucose test, and an HIV and syphilis screening. These aid in the detection of red cell alloimmunization, maternal hemoglobinopathy, infection, poor glycemic control, and undetected diabetes.

Consider performing a urine drug test, particularly for cocaine, which has been linked to placental abruption and maternal hypertension. Use the Kleihauer Betke test to check all women for fetomaternal bleeding right away after a stillbirth. Acid elution test for fetal RBC in the maternal circulation, may help to determine the reason for the stillbirth.

Screening for Infection:

Due to the high prevalence of women with positive serologies from prior infections, infection screening is challenging. Enterococcus species, Group B Streptococcus, and E. coli are the most often found bacterial infections linked to stillbirth. Most infection-related stillbirths happened before 24 weeks of pregnancy. [38] As clinically warranted, tests for toxoplasmosis IgM and IgG, CMV(cytomegalovirus) IgM and IgG, and parvovirus IgM may be conducted. The fetoplacental tissues can exhibit telltale symptoms of viral infection in the fetoplacental tissues. Rarely are viral cultures necessary, not often required.

Disseminated Intravascular Coagulation (DIC)

Diffuse intravascular coagulation in the setting of stillbirth is nowadays very uncommon because of early identification and treatment. When a fetal death has gone untreated for over three weeks or when it sis made worse by placental abruption or infection, it may be required to rule out DIC.[44]

As per research performed in 2002 by Petersson Karin et al., a putative explanation for the stillbirth was found in 91% of the instances. Infections (24 percent), placental insufficiency/intrauterine growth restriction (22 percent), placental abruption (19 percent), concurrent maternal diseases (12 percent), congenital abnormalities (10 percent), and difficulties with the umbilical cord (9 percent) were discovered to be the most common causes. They concluded that a siutable test reduces the frequency of unexplained instances in cases of intrauterine fetal demise.[44]

In 2012, S R Tamrakar et al., research on 4219 deliveries and 97 fetal fatalities. The included instances of intrauterine foetal death (n=90) were contrasted with a control group of randomly chosen pregnancies delivered within the same period(n=537). In 2010 and 2011, the incidence of IUFD was 2.13%. Compared to moms of live-born children, stillbirth group mothers were a little older (23.62 ±4.31 years vs. 25.47 ± 5.64 years, p value=0.000). Women of Tamang ethnicity and primiparous status made up a significantly higher percentage of the stillbirth group (p=0.011, 0.000). Compared to live births, fetuses evacuated following IUFD were lighter (2925.14 ± 444.14 g vs 2182.78 ± 821.04 g, p=0.000) for gestational age. As might be expected, the stillborn infants typically arrived at a younger gestational age (p=0.000). As parity increases, the likelihood of intrauterine foetal death eventually declines. There is no denying that women's health would significantly improve if the coordination between tertiary care centers and peripheral health care centers was improved. They concluded that the majority of cases were mothers not receiving antenatal care or those receiving antenatal care in the periphery.[45]

According to research by J. Man et al., there were 1064 IUFD in 2016; they included 246 early intrauterine fetal deaths (IUFD) (less than 20 weeks), 179 late IUFDs (20 to 23 weeks), and 639 stillbirths (less than 24 weeks' gestation). Over 40% (n = 412) of cases had a definitive etiology found, whereas nearly 60% (n = 652) were categorized as "unexplained," with about half having known risk variables or uncertain significance lesions and the other half (n = 292 (45%)) being completely unaccounted for. With increasing maceration, a stepwise rise in the percentage of mysterious fatalities was seen. While Black and Asian women had a considerably higher percentage of mortality from ascending infection, women over the age of 40 had a significantly higher percentage of placenta-related causes. The

percentage of unexplained death ranges from about 30% to 60% depending on how the importance of symptoms is perceived. Accordingly, the difference in percentage of "unexplained" cases is mostly reliant on conjecture about the processes of death. Determining the cause of death relies on the categorization scheme being used as well as individual interpretation.[46]

250 intrauterine fetal fatalities were recorded among 6942 deliveries, with the overall cause of death and percentage frequency, that took place during the research period, according to a study done in 2016 by Susmita Sharma et al., 36/1000 babies born had intrauterine fetal demise. There were 228 unscheduled and unattended deliveries. Among the other results were the following: rural population (58%), previous stillbirth (9.2%), low socioeconomic group (71.2%), gestational hypertension (32.8%), anemia (74.4%), antepartum hemorrhage (18.8%), and congenital malformations (CMFs) (8.8%). They concluded that their population has a greater rate of intrauterine fetal fatalities than those recorded from advanced nations. This is associated with the greater frequency of undiagnosed CMFs, anemia, pregnancy-induced hypertension, illiteracy, low socioeconomic position.[47]

In their research Stephanie Alimena et al., which was released in 2017, examined 19,264 maternal/infant pairs. The unaccounted-for IUFD rate was 2.02 per 1000 babies and overall NICU admission rate was 2.7 percent. At 39 weeks, there was the lowest rate of IUFD (1.40 per 1000 births). there was a 2.74(95% CI 0.35-21.83) risk of IUFD at 42 versus 39 weeks, 2.09 (1.47-2.98) risk of NICU admission, 2.54 (1.62-3.97) risk of respiratory morbidity, a 3.38 (1.84-6.18) risk of transient tachypnea of the newborn or respiratory distress syndrome risk, according to odds ratios that took into account ethnicity, maternal smoking, ethnicity, age,

delivery method. In conclusion, births at 38–39 weeks were associated with the lowest infant respiratory morbidity. IUFD was 2.74 times higher more probably to occur at 42 weeks than at 39 weeks.[48]

The number of IUFD beyond 20 weeks' gestation/all deliveries at their center was 38/6878 instances (0.53 percent) in 2001-2007 and 35/7326 (0.48 percent) in 2008-2014, according to research by Hiroko Takita et al., published in 2018. Fetal anomalies were the main contributing factor to IUFD from 2001 to 2007 (43.2%), however from 2008 to 2014, their incidence dropped to 8.6% ($P < 0.01$). The incidence of abnormalities in the umbilical cord, however significantly increased from 30 percent in 2001–2007 to 54.5 percent in 2008–2014 (P=0.06). Chromosome abnormalities were frequently seen between 2001 and 2007 (56% of IUFDs were brought on by prenatal abnormalities). In both times, umbilical ring constrictions and hyper-coiled cords (HCC) were the common reasons for IUFD. Due to umbilical cord entanglemet, velamentous cord insertion, umbilical cord constriction and HCC, IUFD incidence increased despite having low prevalence. In conclusion, fetal anomalies contributed less frequently to IUFD, but abnormalities in the umbilical cord were more frequently linked to IUFD.[49]

2019 saw 100 instances of IUFD, according to Anisha Manocha et al., mothers were 26 years old on average (18-36 years). 46 was Primipara's age. There were 15 term (more than 37 weeks), 65 early preterm (PT)(< 34 weeks), and 20 late PT (34 weeks to < 37 weeks) IUFD. It was 30 weeks on average for gestation. Fetuses were divided 1:1.7 into male and female ones. Preeclampsia (n = 39), oligohydramnios (n = 5), pre-gestational diabetes (n = 7), IUGR (n = 7), and unfavorable obstetric history (n = 6) were among the pertinent obstetric problems.

It weighed 256 grams on average. The incidence of maternal and FVM combined was 10%, with maternal vascular malperfusion having a 30% prevalence. Twelve percent (12%) and six percent (6%) of the patients had just inflammatory symptoms 18% of cases had no definite cause. 51 cases had a direct contributor to IUFD, while 21, 11, and 9 cases each had a substantial, slight, or unlikely contribution. It wasn't known in nine instances. In 35 cases, lesions that suggested fetal hypoxia were seen. MVM appeared more frequently (5 and 23%, respectively) in both early and late PT. Idiopathic conditions were the most frequent cause of term placentas. The most prevalent reason of IUFD and a direct cause of newborn mortality, then, were lesions of the MVM.[50]

Achala Thakur et al., looked at 11,006 obstetric admissions in 2019. Of the mothers, 152 experienced intrauterine fetal demise. In this age group, there were 128 women or 84.2%. 39 (2.1%) and 81 (53.3%) of the 152 women were post-term, respectively. A total of 77 (50.7%) were primigravida, and 35 (23%) were second gravida. The most frequent risk factor found in 30 (26.78%) women was hypertension. 49 (32.2%) of the 152 women in the sample lacked a formal education. Ten (6.6%) of the women had previously experienced fetal death. Four (2.6%) of the women had previous medical condition. Six (3.9%) underwent laparotomy for uterus rupture, 21 (13.8%)had caesarean sections and 125 (82.2%) of the women delivered vaginally. Placenta previa was the leading cause of caesarean sections in 7 (33.33%) of the women. Four women (2.6%) had diabetes. 95 infants (62.5% of them male) and 57 (37.5% of them female) were born. Five (3.3%) infants experienced birth defects. Pregnancy-related hypertension was shown to be the most often known risk factor for intrauterine fetal death.[51]

According to research by Minhui Guan et al. published in 2022, Histology and enhanced proinflammatory responses imply that fetal mortality was related to placental malperfusion caused by Delta variant infection. According to the study, fetuses who have the Delta variation may experience high morbidity and mortality. The benefits of vaccination for lowering the risk of SARS-CoV-2 infection in expectant mothers and their fetuses should not end.[52]

A case of a 22-year-old uncomplicated Japanese woman who had SARS-CoV-2 during the second trimester is one such instance and died intrauterinally as a result of placental insufficiency brought on by COVID-19 placentitis was published in the paper by Maya Kato et al., in 2022. This research emphasizes the need for longitudinal evaluation of fetal well-being utilizing monitoring of fetal heart rate monitoring and early diagnosis of maternal coagulation dysfunction suggesting SARS-CoV-2 inflammation for treating COVID-19 during pregnancy.[53]

A retrospective cohort analysis was conducted in 2022 by Erica Testani et al., it compared patients who underwent medical termination for a congenital defect with those who underwent medical termination for intrauterine fetal death (IUFD) prior to 24 weeks of gestation. There were 95 patients in each group. Patient mean ages varied between the groups (fetal anomaly 34 years versus IUFD 31 years, P = 0.005) and pretreatment with mifepristone (fetal anomaly 55% versus IUFD 5%, P 0.001). Specific problems did not differ, and the composite complication rate (fetal abnormality 14% versus IUFD 17%) was comparable. In conclusion, complications associated with second-trimester medical terminations for IUFDs are comparable to those seen with induction terminations for fetal abnormalities.[54]

MATERIALS AND METHODS

Study site: Department of Obstetrics & Gynecology RL JALAPPA and Research Center attached to Sri Devaraj Urs Medical College, affiliated to Sri Devaraj Urs Academy of higher Education and Research Tamaka, Kolar- 563101.

Study population: All the eligible pregnant women admitted to the labor room with intrauterine foetal demise at R.L JALAPPA Hospital attached to Sri Devaraj Urs Medical College were considered as the study population.

Study design: A Prospective observational study

Sample size: Sample Size:

Sample size was estimated by using the proportion of antenatal risk factor hypertension in subjects with still birth was 20.7% from the study by Abha singh et al. using the formula

$$\textbf{Sample Size} = \frac{Z_{1-\alpha/2}{}^2 \, P\,(1-P)}{d^2}$$

$Z_{1-\alpha/2}$ = is standard normal variate(at 5% type 1 error ($P<0.05$) it is 1.96 and at 1% type1 error($P<0.01$) it is 2.58).As in majority of studies P values are considered significant below 0.05 hence 1.96 is used in formula.

P= Expected proportion in population based on previous studies or pilot studies

d= Absolute error or precision

P = 20.7% or 0.207

q = 79.3 or 0.793

d = 8% or 0.08

Using the above values at 95% Confidence level a sample size of 99 subjects will be included in the study.

Sampling method:

Study duration: The data gathered between January 2021 to December 2022.

Inclusion Criteria:

1. All patients with antepartum intrauterine foetal death after 24 weeks of gestation

Exclusion Criteria:

1. Foetus less than Gestational age of less than 24 weeks of gestation
2. Intra partum fetal demise

Ethical considerations: The Institutional ethics committee accepted. Every study subject gave written informed permission, and only those were enrolled in the analysis. The risks and benefits involved in the study were explained to the participants before obtaining consent as well as voluntary participation. The confidentiality of the study participants was maintained.

Data collection tools: A well-organized research proforma included documentation of all relevant parameters.

Methodology:

This prospective observational study, done with ethical consent from the research institution. This research included all hospitalized antepartum intrauterine fetal demises after 24 weeks of gestation, during the study period January 2021– December 2022.

A thorough maternal history was obtained, paying particular attention to any high risk factors for intrauterine fetal demises in the current and prior pregnancies. General physical and systemic checkup of the mother at the time of admission to the hospital

was carried out. Review of prenatal data to rule out any abnormal clinical outcomes. All the mothers with antepartum intra uterine fetal demise were treated according to the hospital protocol.

All investigations such as Complete blood count, Blood grouping and typing, Thyroid profile, Serology (HIV, HBsAg, VDRL), FBS, PPBS, Oral Glucose Challange Test, Ultrasonography, Liver function tests, Renal function tests, Coagulation profile done. Additional tests such as antiphospholipid antibody test (anticardiolipin, lupus anticoagulant, anti-B2 glycoprotein-1 antibodies), Indirect combs test, TORCH titres done if required.

Mode of delivery and birth weights of fetuses noted. Head to toe gross examination, weight and anthropometry of baby done. The evaluation of the development (term or preterm) and the signs of maceration noted. All the fetuses examined for any malformations and detailed macroscopic examination of the placenta. Placenta checked for its appearance, weight, retro-placental clot/infarcts and calcification. Cord observed for any abnormality.

If no reason could be found, histopathology of placenta done. Photograph of stillborn baby with gross congenital anomalies and infantogram done. Fetal autopsy done (if consent given). Pre structured proforma filled for every case.

STATISTICAL METHODS:

Statistical analysis:

The SPSS 22 version software was used to analyse the data, which was put into a MS Excel data sheet. Frequencies and proportions were used to represent categorical data. Standard deviation and mean were used to depict continuous data.

Graphical representation of data: Various types of graphs generated using MS Excel and MS word.

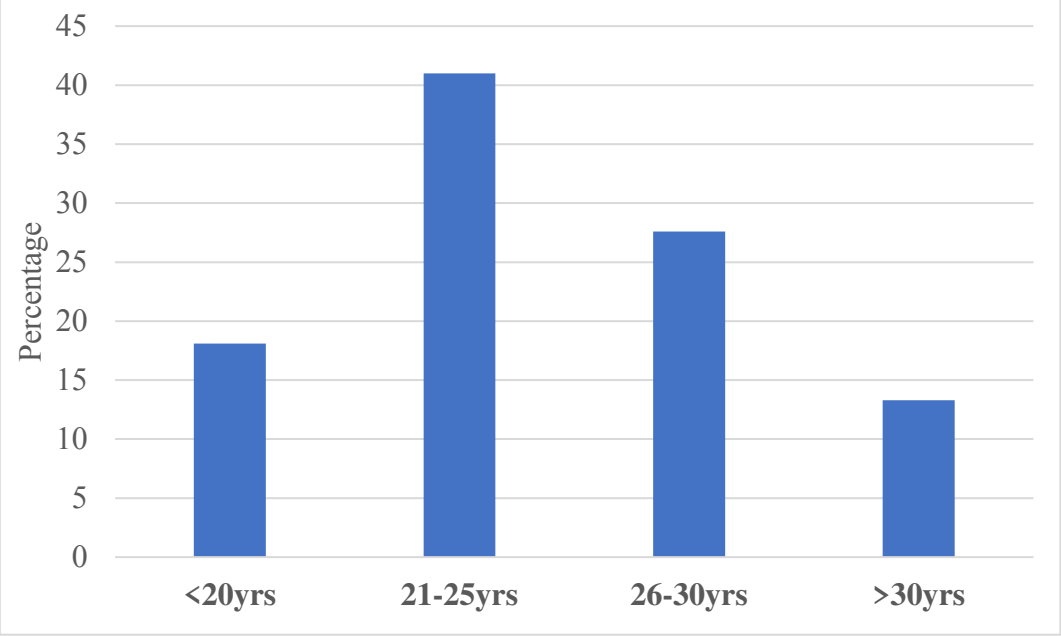
Statistical software: Data analysis was done using MS Excel**,** SPSS version 22 (IBM SPSS Statistics, Somers NewYork, United States America).

RESULTS

Table 1:- Subjects distributed according to age group.

Age group	Frequency(N)	Percentage(%)
19-20yrs	19/105	18.1
21-25yrs	43/105	41.0
26-30yrs	29/105	27.6
>30yrs	14/105	13.3
Total	105	100.0

Figure 1:- Graph showing Distribution of subjects according to age group.

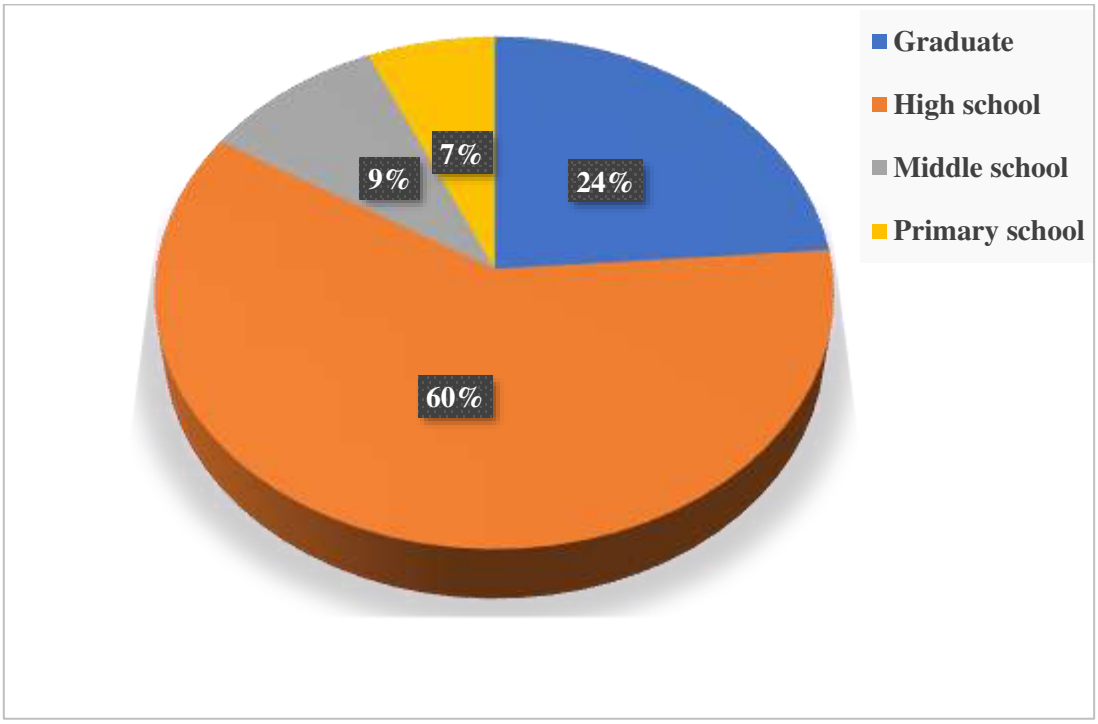


Of the 105 study subjects, 41% were among 21-25 years age followed by 26-30 years age (27.6%). (Table 1, Figure 1).

Table 2:- Distribution of subjects according to educational status

Educational status	Frequency(N)	Percentage (%)
Primary school	7/105	6.7
Middle school	10/105	9.5
High school	63/105	60.0
Graduate	25/105	23.8
Total	105	100.0

Figure 2:- Graph showing Distribution of subjects according to education.

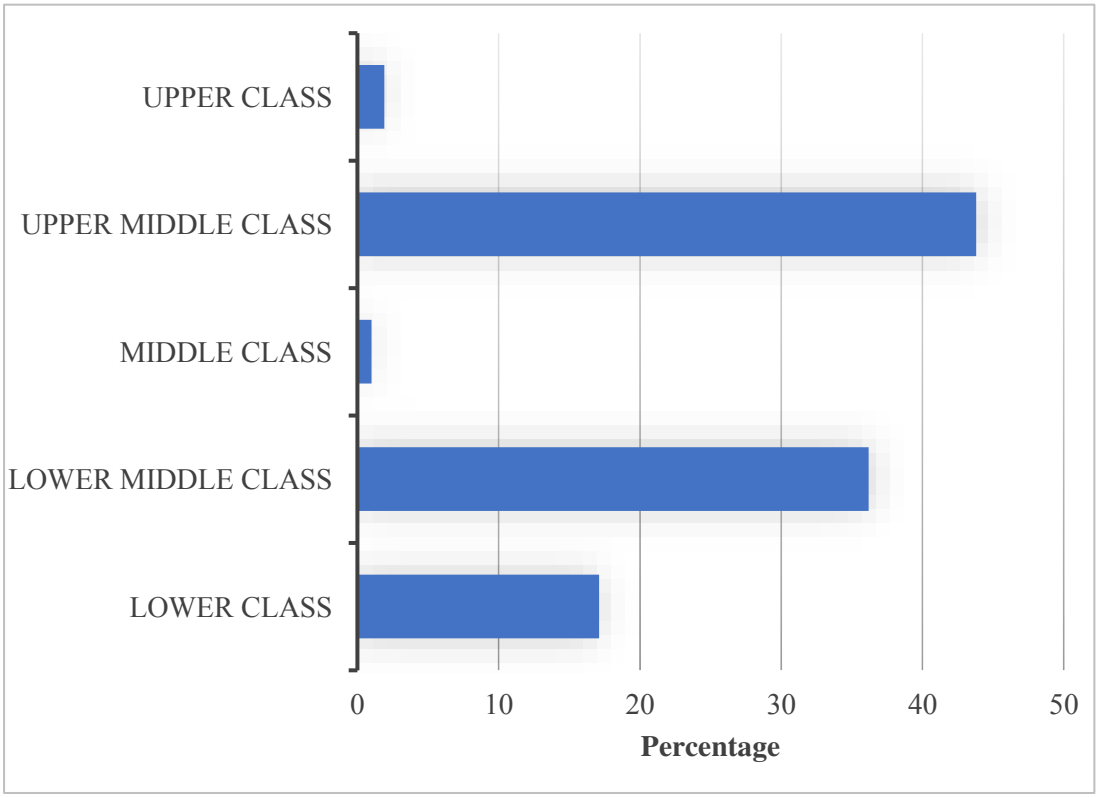


Among the 105 patients in this study, 60% studied up to high school followed by 25 (23.8%) graduate. (Table 2, Figure 2).

Table 3:- Distribution of subjects according to socioeconomic status

Socioeconomic status	Frequency(N)	Percentage (%)
Lower class	18/105	17.1
Lower middle class	38/105	36.2
Middle class	1/105	1.0
Upper middle class	46/105	43.8
Upper class	2/105	1.9
Total	105	100.0

Figure 3:- Graph showing Distribution of subjects according to socioeconomic status

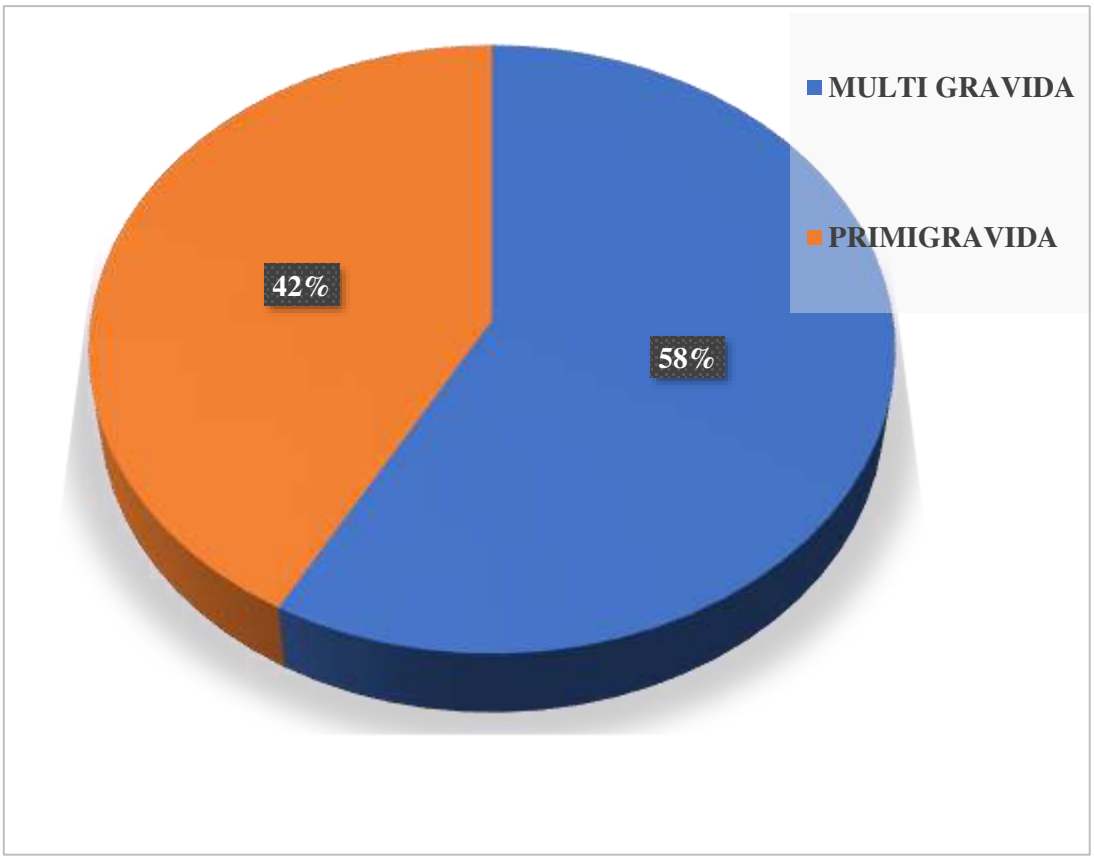


Most of the study subjects belonged to upper middle class (43.8%) , followed by lower middleclass(36.2%). (Table 3, Figure 3).

Table 4:- Distribution of subjects according to parity status

Parity status	Frequency(N)	Percentage(%)
Primigravida	44/105	41.9
Multigravida	61/105	58.1
Total	105	100.0

Figure 4:- Graph showing Distribution of subjects according to parity status.

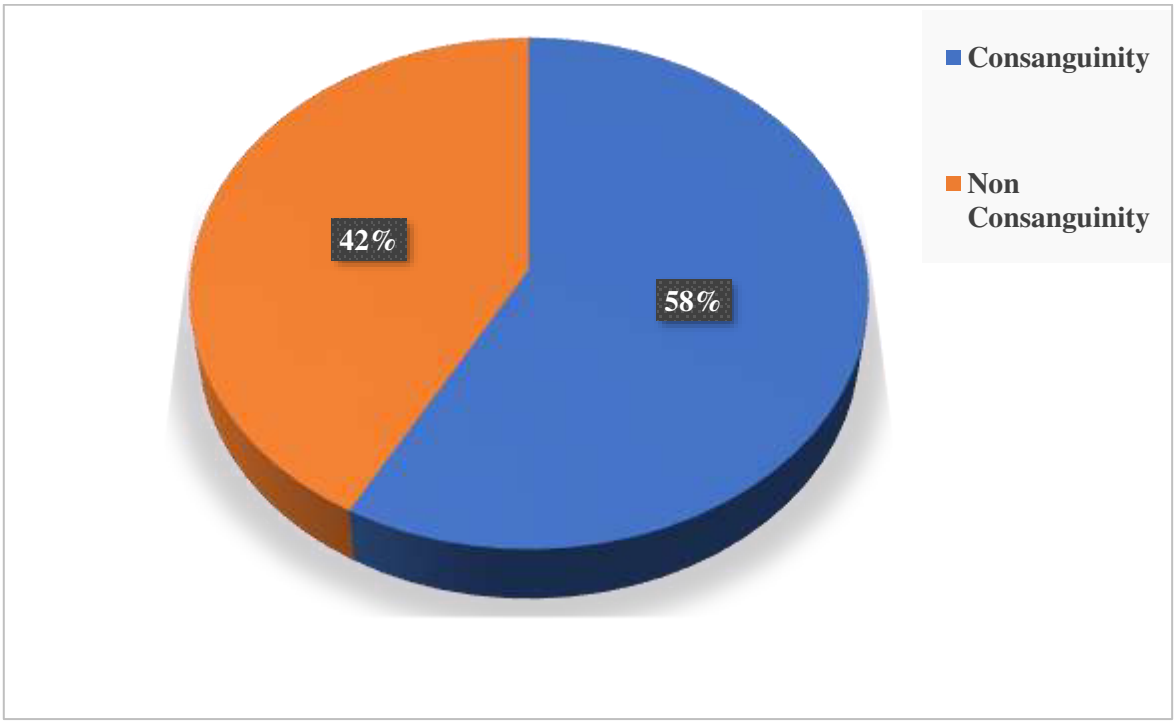


Out of 105 study population, 61(58.1%) were multigravida and 44(41.9%) were primigravida (Table 4, Figure 4).

Table 5:- Distribution of subjects according to consanguineous marriage.

Consanguineous marriage	Frequency (N)	Percentage (%)
Consanguinity	61/105	58.1
Non-Consanguinity	44/105	41.9
Total	105	100.0

Figure 5:- Graph showing Distribution of subjects according to consanguineous marriage.

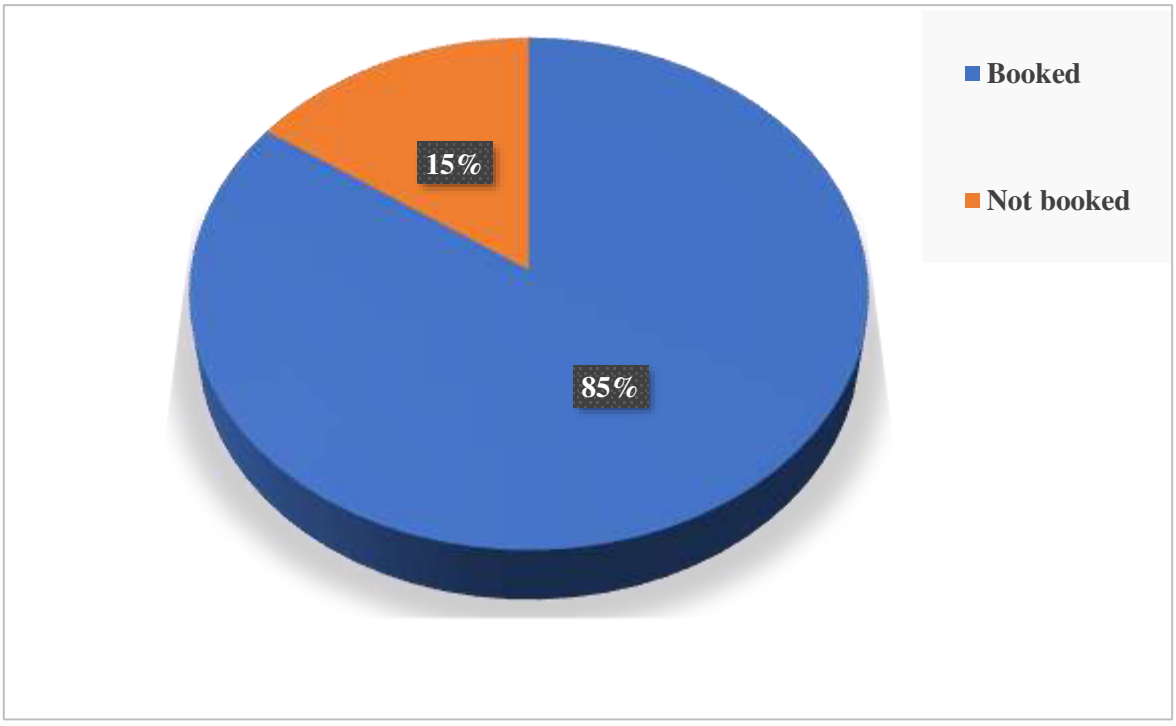


Out of the 105 subjects, 61 (58.1%) had consanguineous marriage,44 (41.9%) had nonconsanguineous marriage. (Table 5, Figure 5).

Table 6:- Distribution of subjects according to antenatal care (Booked/Not booked)

Booked/Not booked	Frequency(N)	Percentage(%)
Booked	89/105	84.8
Not booked	16/105	15.2
Total	105	100.0

Figure 6:- Graph showing distribution of subjects according to antenatal care Booked/not booked

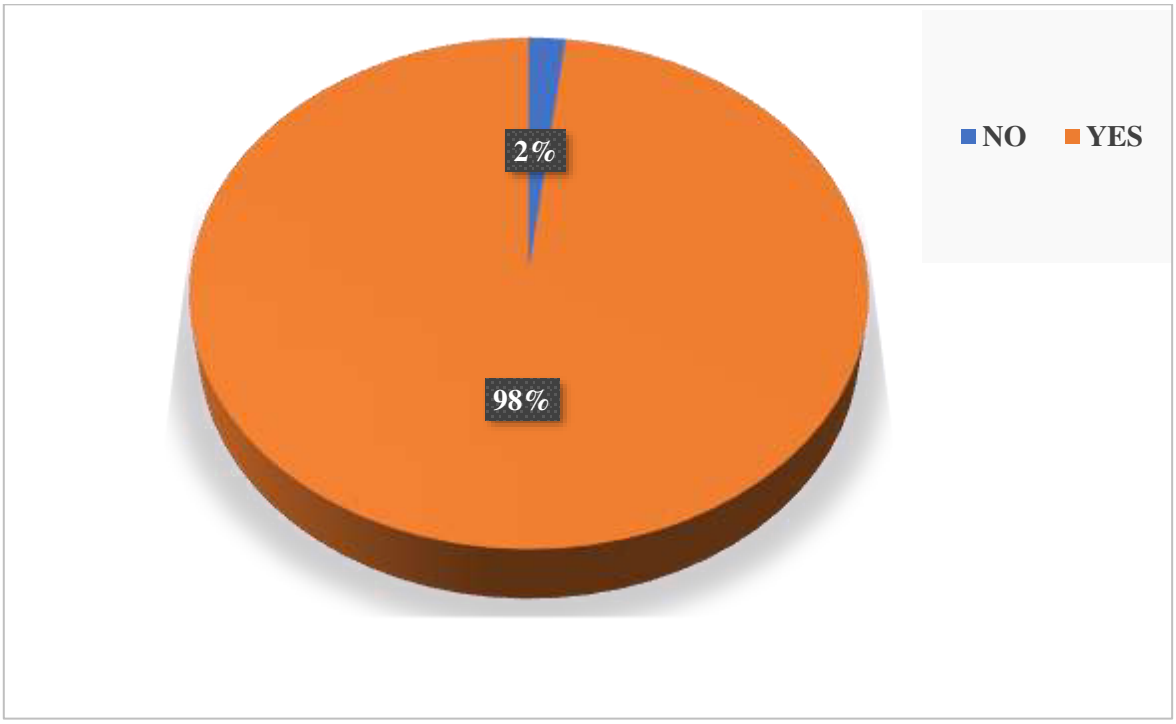


Out of 105 subjects, 16(15.2%) had no prior antenatal visits, while 89 (84.8%) were booked outside and were referred. (Table 6, Figure 6).

Table 7:- Distribution of subjects according to decreased perception of foetal movements.

Decreased perception of foetal movements	Frequency(N)	Percentage (%)
Yes	103/105	98.1
No	2/105	1.9
Total	105	100.0

Figure 7:- Graph showing Distribution of subjects according to decreased perception of foetal movements



103 out of 105 subjects had decreased perception of foetal movements(Table 7, Figure 7).

Table 8:- Distribution of subjects according to past obstetric history of intrauterine fetal demise

History of intrauterine foetal demise	Frequency (N)	Percentage (%)
No	97/105	92.4
Yes	8/105	7.6
Total	105	100.0

Previous history of intrauterine fetal demise noted in 8 (7.6%) subjects out of 105. (Table 8, Figure 8).

Figure 8:- Graph showing Distribution of subjects according to past obstetric history of intrauterine fetal demise

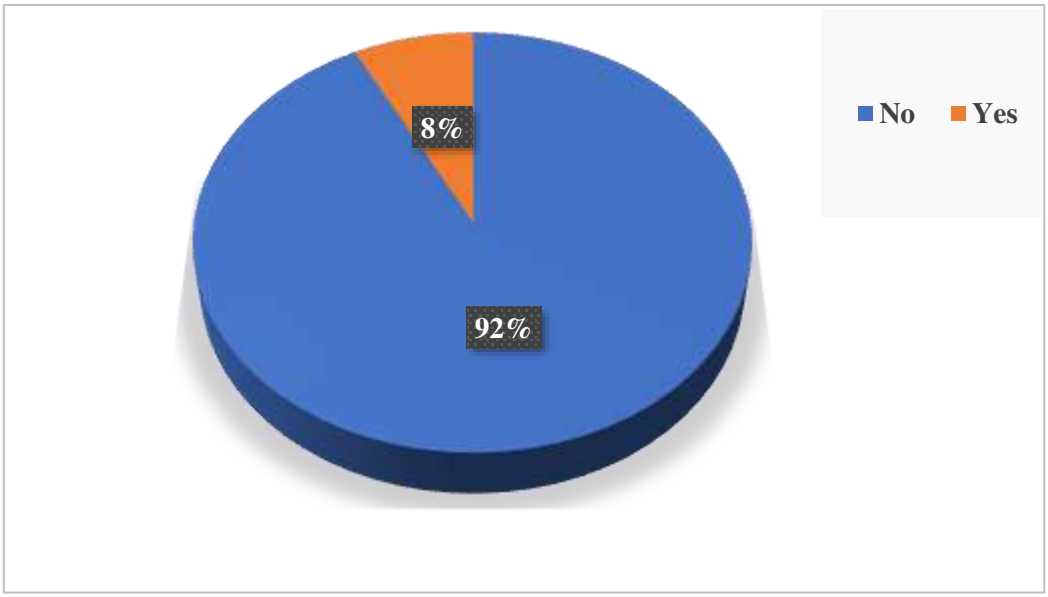
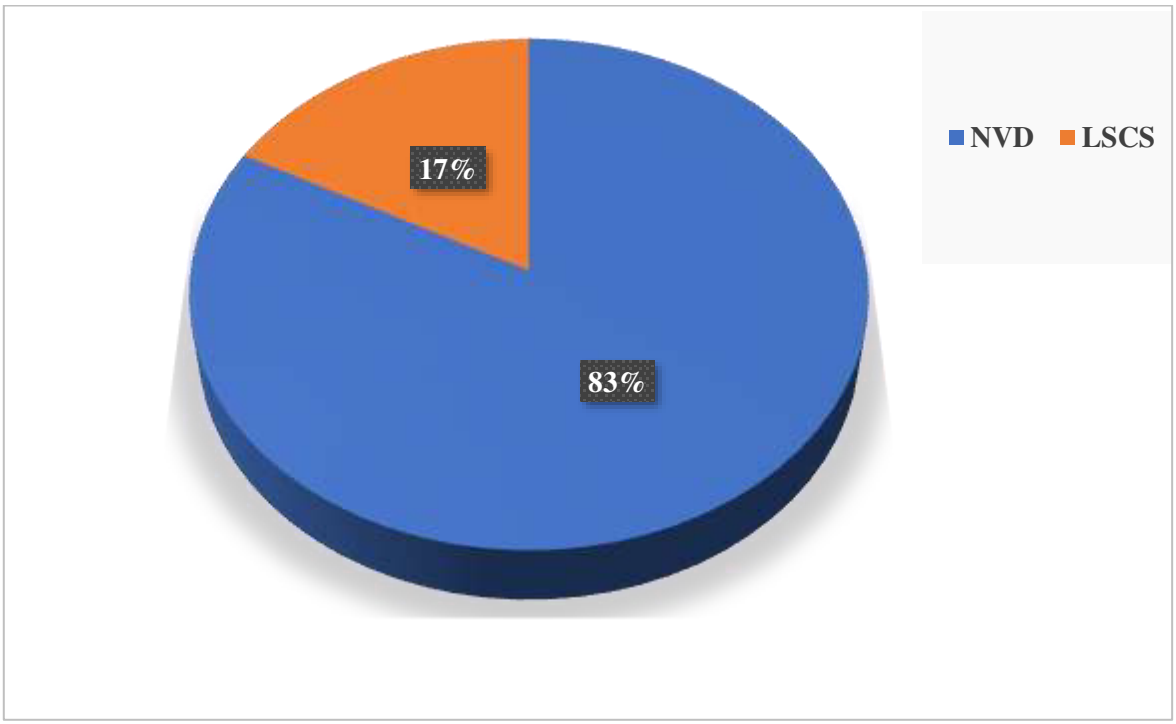


Table 9:- Distribution of subjects according to mode of delivery.

Mode of delivery	Frequency(N)	Percentage (%)
Vaginal delivery	87	82.9
Caesarean section	18	17.1
Total	105	100.0

Figure 9:- Graph showing Distribution of subjects according to mode of delivery.



87(82.9%) out of 105 had vaginal delivery of which 8subjects (7.6%) had vaginal birth after cesarean section and 18(17.1%) had undergone caesarean section. (Table 9, Figure 9).

Table 10: - Distribution of subjects according to method of induction of labour.

Method of induction of labour	Frequency	Percentage (%)
Foley bulb	49	56.3
Misoprostol	52	59.7
Dinoprostone gel	7	8

According to the induction procedures, misoprostol was mostly used comprising of about 52(59.7%), followed by foley bulb induction 49(56.3%), and dinoprostone gel induction were 7 (8%). Augmentation of labour was done with oxytocin in about 75 subjects comprising about 86.2%. (Table 10, Figure 10).

Figure 10:- Graph showing Distribution of subjects according to method of induction of labour.

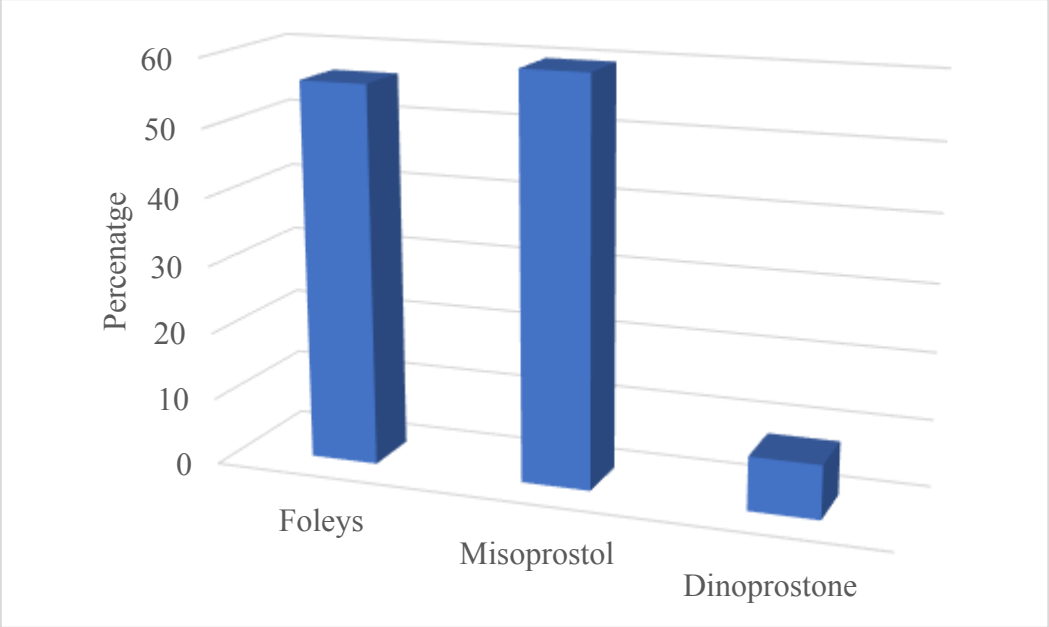


Table 11: - Indications for LSCS

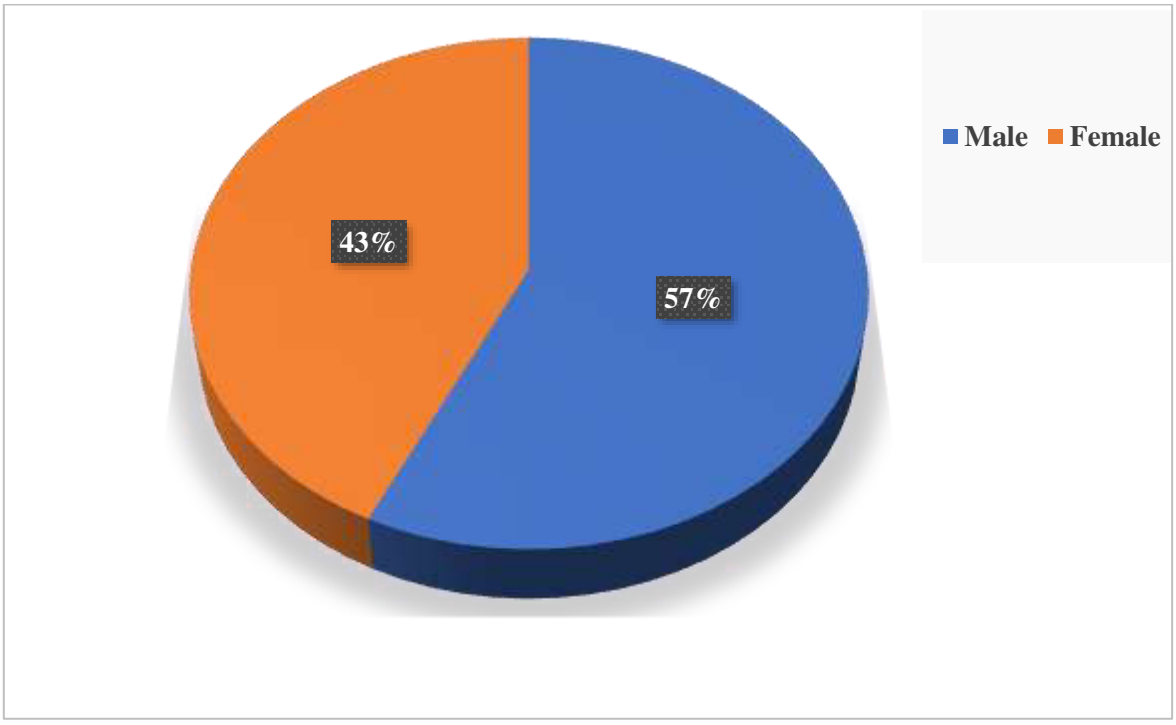
Indications for caesarean section	Frequency(N)	Percentage(%)
APH	1/18	5.5
Complete Placenta Previa	2/18	11.11
Failed induction	1/18	5.55
Obstructed labour	2/18	11.11
Preterm breech failed induction	1/18	5.5
Shoulder dystocia	1/18	5.5
Previous LSCS	8/18	44
Previous LSCS with Abruptio placenta	2/18	11.11

Of the cesarean section previous Cesarean section was the indication in about 44% cases followed by antepartum hemorrhage. (Table 11).

Table 12:- Distribution of subjects according to fetal gender.

Foetal gender	Frequency(N)	Percentage (%)
Male	60/105	57.15
Female	45/105	42.85
Total	105	100.0

Figure 11:- Graph showing Distribution of subjects according to fetal gender.

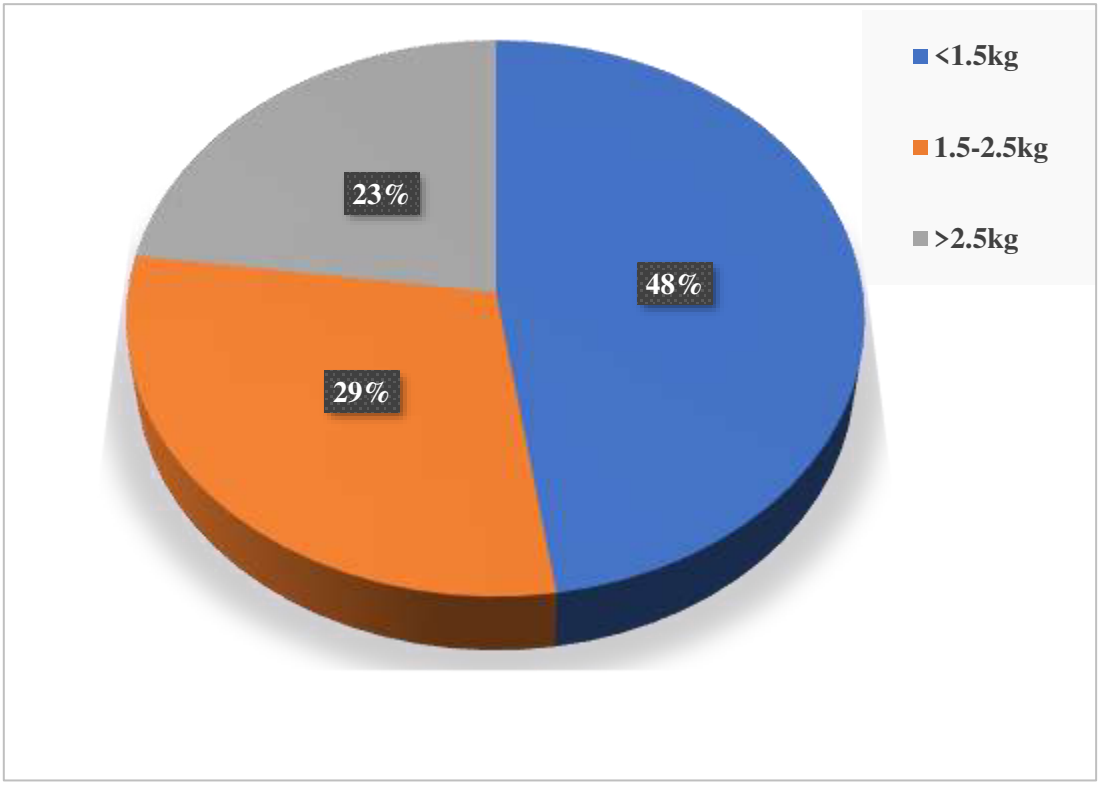


60 (57.15%) of them had dead male babies and 45(42.85%) were female babies. (Table 12, Figure 11).

Table 13:- Distribution of subjects according to birth weight.

Birth weight	Frequency(N)	Percentage (%)
<1.5kg	50/105	47.6
1.5-2.5kg	31/105	29.5
>2.5kg	24/105	22.9
Total	105	100.0

Figure 12: Graph showing Distribution of subjects according to birth weight

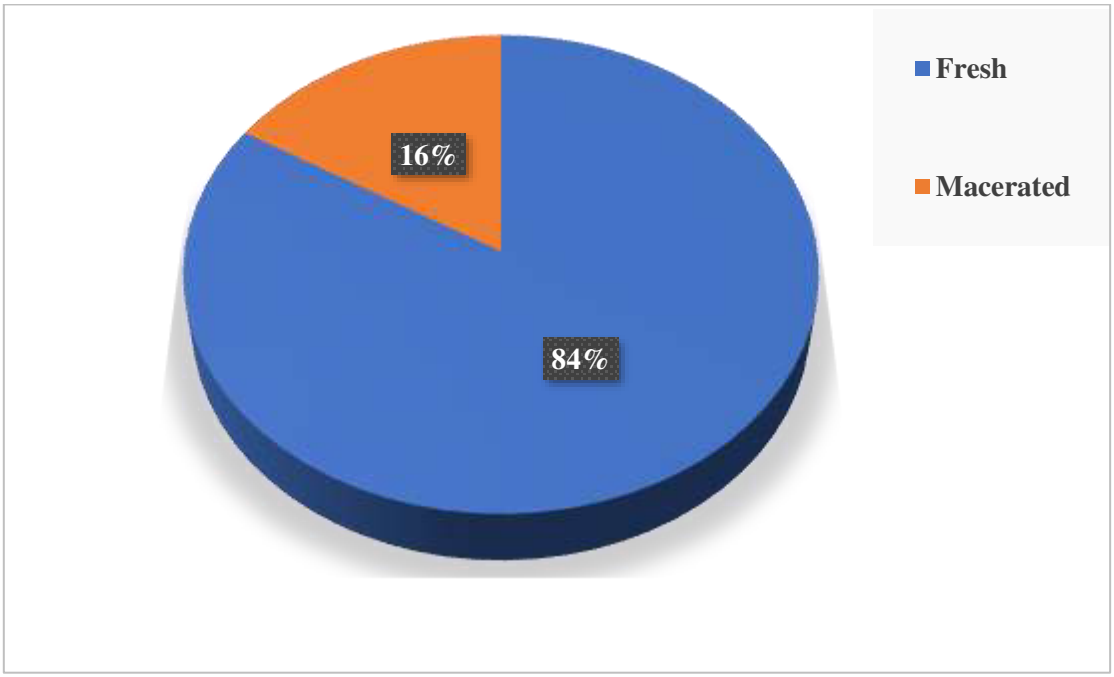


Less than 1.5kg was seen in about 47.6% followed by 29.5% belonging to 1.5-2.5kg. (Table 13, Figure 12).

Table 14:- Distribution of subjects according to fresh/Macerated intrauterine fetal demise.

Intrauterine fetal demise	Frequency(N)	Percentage(%)
Fresh	88/105	83.8
Macerated	17/105	16.2
Total	105	100.0

Figure 13:- Graph showing Distribution of subjects according to fresh/Macerated intrauterine fetal demise.

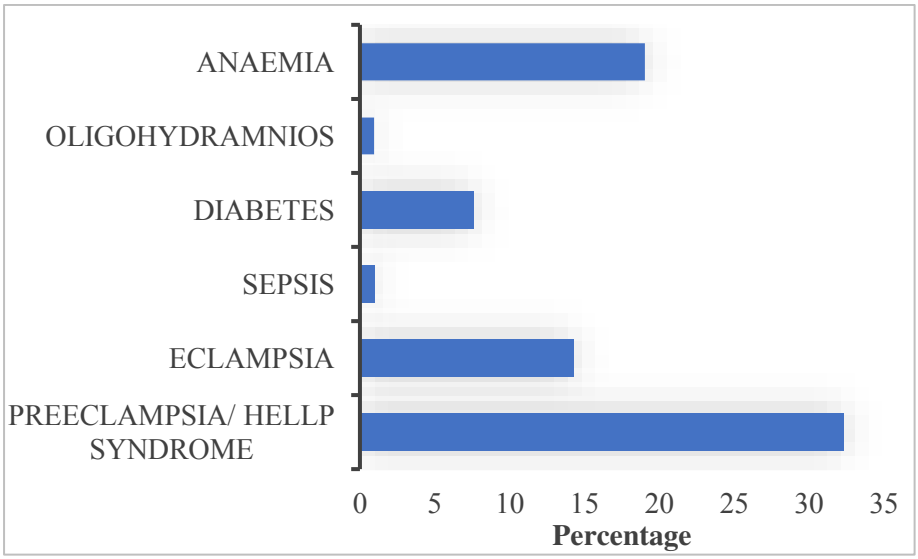


88 (83.8%) out of 105 deliveries were fresh intrauterine fetal demise and 17(16.2%) were macerated babies. (Table 14, Figure 13).

Table 15:- Maternal Factors

Maternal Factors	Frequency(N)	Percentage (%)
Preeclampsia	30	28.57
Anaemia	20	19.04
Eclampsia	15	14.28
Diabetes	8	7.61
HELLP syndrome	4	3.80
Oligohydramnios	1	0.95
Sepsis	1	0.95

Figure 14:- Graph showing Maternal Factors



In the maternal factors, Preeclampsia (28.57%), eclampsia (14.28%)and HELLP syndrome (3.80%) accounted for a total of 46.65% of the maternal factors followed by anemia (19.04%). (Table 15, Figure 14).

Table 16:- Placental / cord Factors

Placental / cord Factors	Frequency	Percentage
Abruptio placenta	16	15.23
Nuchal cord round Neck	9	8.57
Placenta previa	5	4.76
Cord Prolapse	2	1.90
True Knot	2	1.9

In the placental factors, abruptio placenta contributed for 15.23%, followed by nuchal cord round the neck that is about 8.57%. (Table 16).

Table 17:- Fetal Factors

Fetal factors	Frequency	Percentage(%)
Fetal growth restriction	28	26.66
Prematurity	23	21.9
Post maturity	1	1.0

28 out of 105 subjects that is 26.66% had fetal growth restriction followed by prematurity(21.9%).

Figure 15:- Graph showing Foetal Factors

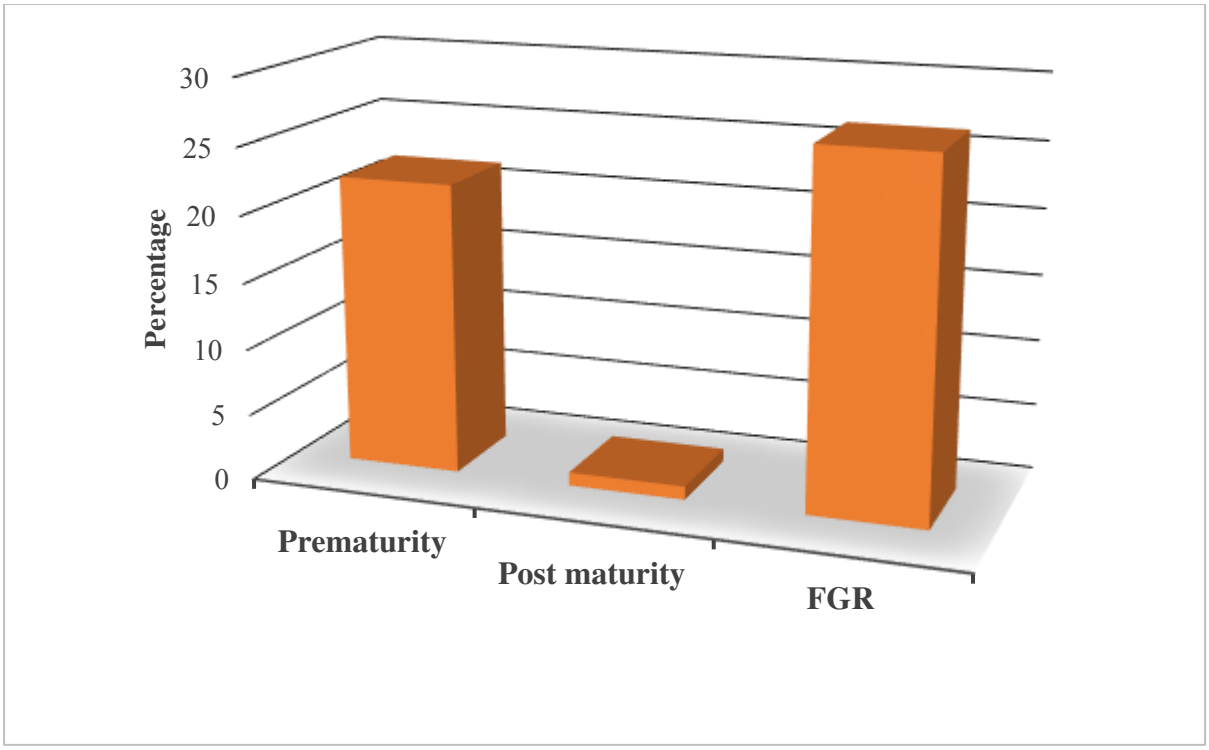


Table 18: - Distribution of subjects according to placental weight.

Placental weight (in grams)	Frequency(N)	Percentage(%)
<150	9	8.6
151-300	39	37.1
301-500	47	44.8
>500	10	9.5
Total	105	100.0

Most of the placental weight belonged to 301grams to 500 grams contributing to 44.8%.

(Table 18, Figure 16).

Figure 16:- Graph showing Distribution of subjects according to placental weight.

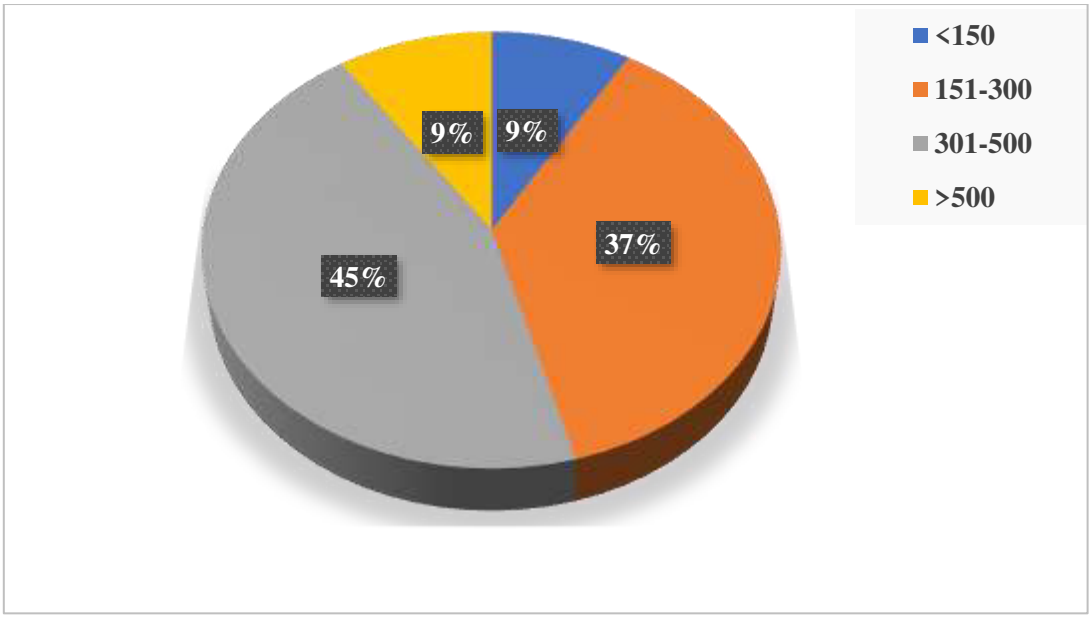
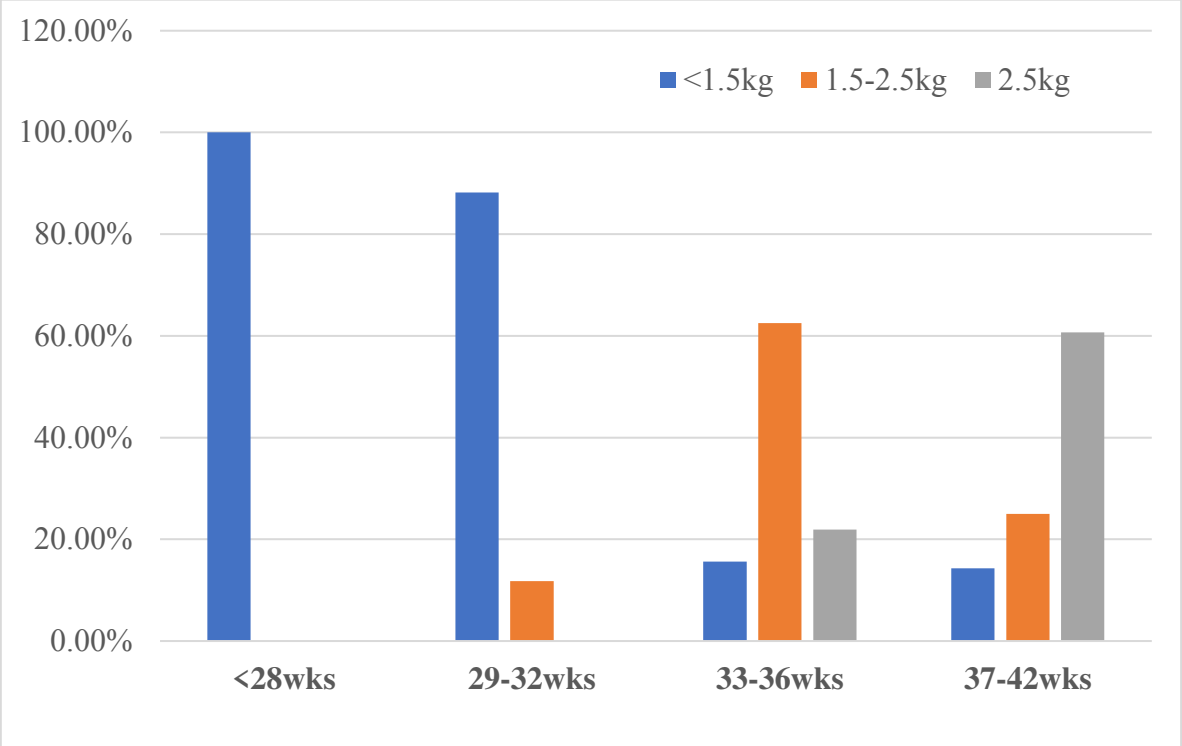


Table 19: - Distribution of subjects according to birth weight and gestational age.

Gestational age	<1.5kg		1.5-2.5kg		2.5kg	
	N	%	N	%	N	%
<28wks	11	100.0%	0	.0%	0	.0%
29-32wks	30	88.2%	4	11.8%	0	.0%
33-36wks	5	15.6%	20	62.5%	7	21.9%
37-42wks	4	14.3%	7	25.0%	17	60.7%

P value <0.001, there was statistically significant difference found between birth weight and gestational age. (Table 19, Figure 17)

Figure 17: - Graph Showing Distribution of subjects according to birth weight and gestational age.



And 17 fetuses out of these 105 subjects gave consent for fetal autopsy. Fetal autopsy carried out after infantogram showed no significant histopathological changes.

DISCUSSION

This Prospective observational study was conducted in patients admitted with intra uterine foetal demise in R L Jalappa hospital attached to Sri Devaraj University of Medical College, Tamaka, Kolar to find out the associated risk factors for antepartum intra uterine foetal demise and to determine the probable cause of antepartum foetal demise. The study included all antepartum intrauterine foetal demises admitted to the hospital during the study period.

Distribution of subjects according to age group.

In this study to find out the associated risk factors for antepartum intra uterine foetal demise and to determine the probable cause of antepartum foetal demise, of the total 105 study subjects of the age groups 19-20 years to > 30 years were enrolled, 41% were among 21-25 years age followed by 26-30 years of age, which is about 27.6%. Although biological immaturity of young mothers was long believed to be the reason for maternal complications and adverse birth outcomes in young mother pregnancies, much research has shown that the correlation between young mother pregnancies and poor birth outcomes is confounded by poverty and socioeconomic disadvantage in young women's lives. Compared to adult mothers, young mothers are more likely to live in poverty, experience more kinds and greater exposure to stress, to have worse mental health, to have higher substance abuse problems, and are at an elevated risk for posttraumatic stress disorder.[55] Sharma et al in his study to determine maternal-fetal characteristics and causes of stillbirth in Nepal and stated that the distribution of age of women who experienced stillbirth ranged from 15 to 40 years with a mean age of 24.6 and the similar age groups of the study subjects experiencing stillbirths were seen in the study by Singh N et al and Kanavi

JV et al.[56-58] A retrospective observational study by Manocha et al to study the causes of IUFD included females of maternal age ranging from 18 years to 36 years with the mean age of 26 years which is nearly similar to the present study.[59] Also, Froen JF stated in his study that of all stillbirths, the highest proportion occurred in 21–30year.[60]

Table 20:- Comparison of age in various studies

S.NO	STUDY	YEAR	RESULT
1.	Present study	2022	The age group between 21and 30 made up around 27.6% of the population, followed by the 21 to 25 age group with41%.
2.	Sharma et al [56]	2021	Age ranges from 15 to 40, with a mean of 24.6.
3.	Manocha et al [59]	2016	The average mother age was 26 years, with a range of 18 to 36 years.
4.	Froen JF [60]	2016	The highest proportion occurred in 21–30year

Distribution of subjects according to education status

Among the 105 patients in the present study, 63(60%) subjects had high school education followed by 25 (23.8%) graduate females. Low levels of education (less than year 10) are linked to almost two times the risk of stillbirth. From the view point of developing world, improving womens health and education awareness levels as well as enhancing institutional capacity might aid in supporting safe and healthy pregnancies.[60] Futhermore, it indicates that

maternal education has a “dose-response” link, with lower education being associated with a higher risk of IUFD.[61]

Also some studies by Sharma et al who studied the distribution of subjects experiencing stillbirths according to their education and that majority of subjects (64.6%) were illiterate (no formal education) and another by Froen JF that the highest percentage of stillbirths occurred in women aged 21 to 30 year-olds, and among illiterate women were of some significance to conclude that improiving institutional capacities and raising women’s health and education awareness levels is an important perspective.[56,60]

Table 21:- Comparison of education in various studies

S.NO	STUDY	YEAR	RESULT
1.	Present study	2022	63(60%) subjects had high school education followed by 25 (23.8%) graduate females
2.	Sharma et al [56]	2021	Majority of subjects (64.6%) lacked literacy(no formal education)
3.	Froen JF [60]	2016	The largest proportion occurred in 21–30 year-olds, and among illiterate women

Distribution of subjects according to socioeconomic status

In the current survey, the upper middle class made up the majority of participants (43.8%), followed by lower middle class (36.2%). In a comprehensive analysis of research presenting causes and variables related to stillbirth in lower middle class economies income countries (2000–13), Amiu et al. identified a lack of maternal

awareness and poverty as linked factors in addition to others.[62] Numerous reports have shown that low socio-economic level is a factor in stillbirth in developing nations. Maternal socio-economic disadvantage was one of the characteristics having a population attributable fraction of higher than 50% according to Di Mario et al..[63] According to Williams et al. caste and income index are substantially (P=0.001) linked to stillbirth in India.[59] This correlation between the socioeconomic class and incidences of stillbirths in India was also documented by Bhatacharyya and Palalso.[64,65]

Table 22:- Comparison of socioeconomic status in various studies

S.NO	STUDY	YEAR	RESULT
1.	Present study	2022	Upper middle class (43.8%), lower middle class (36.2%).
2.	Aminu et al [62]	2014	There were higher stillbirths among low amd middle income groups
3.	Di Mario et al.[63]	2007	One of the causes of stillbirths is a mothers socio-economic deprivation
4.	Bhatacharyya [64]	2012	Reported socioeconomic level or income index as substantially(P=0.001) linked with stillbirth in India

Distribution of subjects according to parity status

Primiparity is an important risk factor for stillbirth, contributing to about 15% of these deaths in high-income nations. A rise in the number of pregnant women who also have other significant risk factors, like primiparity, high BMI, and maternal

age of more than 35 years may eventually result in a rise in the number of stillbirths.[65] Manocha et al. study included placentas of IUFD and also studied the distribution of subjects according to parity and concluded that there was 46 primigravidas.[59] Sharma et al determined maternal-fetal features and contributing factors of stillbirth in Nepal and discovered that 48.1% of the women who had stillbirth were primigravida.[56] But in contrast to the above studies the present study reported that out of 105 study population, 61 subjects (58.1%) were multigravida and 44(41.9%) were primigravida. However, there is a broad range of data in the literature; some indicate a greater frequency in primigravida while others record a larger incidence in multigravida.[58,66,67]

Table 23:- Comparison of parity status in various studies

S.NO	STUDY	YEAR	RESULT
1.	Present study	2022	61 subjects (58.1%) were multigravida and 44(41.9%) were primigravida.
2.	Manocha et al [59]	2016	46 primigravidas
3.	Sharma et al [56]	2021	Primigravida made up 48.1% of the women who had stillbirth

Distribution of subjects according to consanguineous marriage.

Consanguineous marriage has been associated with higher rates of newborn and child mortality, infertility, subfertility, diabetes, epilepsy, mental retardation, asthma in the progeny. [68] In addition to congenital defects and low birth weight, consanguineous marriage is also related to greater chances of stillbirth risk.[68] In the present study also, out of the 105

subjects, 61(58.1%) had consanguineous marriage, 44 (41.9%) had nonconsanguineous marriage. A slightly higher incidence of stillbirth was discovered by Stoltenberg et al. among women of Pakistani descent, where consanguineous marriage is frequent.[70] Similar to our result Aminu et al. stated in their study that consanguineous marriage might be an associated risk factors for antepartum intra uterine foetal demise.[62] In contrast to current research , Rahmani SA et al reported that 4696 (79.8%) of marriages were non consanguineous and 1189 (20.12%) were of consanguineous type[69]. Out of consanguineous marriages, whereas 1189 (20.12%) of marriages were non consanguineous. Out of these 621 (52.22%) marriages were between third degree relations, 337 (28.34%) between fourth degree relations, and 231 (19.42%) between fifth degree relations. As a result of growing public knowledge about how to avoid congenital and genetic diseases in kids, Consanguineous spouses approach primary healthcare practitioners for clarification on the potential health hazards to their kids. Health care professionals should receive premarital and preconception counseling on consanguinity, especially in extremely consanguineous groups.[68]. Primary health care providers are faced with consanguineous couples demanding answers to their questions on the anticipated health risks to their offspring. Preconception and premarital counseling on consanguinity should be part of the training of health care providers particularly in highly consanguineous populations.[68]

Table 24:- Comparison of consanguinity in various studies

S.NO	STUDY	YEAR	RESULT
1.	Present study	2022	61(58.1%) had consanguineous marriage, 44 (41.9%) had nonconsanguineous marriage
2.	Aminu et al [62]	2014	Consanguineous marriage as an associated risk factors
3.	Rahmani SA et al [69].	2022	1189 (20.12%) were of consanguineous type,where as 4696 (79.8%) of marriages were not

Distribution of subjects according to obstetric history of intrauterine fetal demise

Obstetric history suggests a history of a poor fetal outcome, such as intrauterine growth retardation, two or more consecutive spontaneous abortion, history of, intrauterine fetal demise, still births, early neonatal death and/or congenital malformations. Maternal infections are a major contributor to pregnancy loss and and more likely to develop in women who are experiencing challenging pregnancies. These infections contribute significantly to morbidity in early and later childhood and cause fetal and neonatal death.[70] In this study, previous history of intrauterine fetal demise noted in 8 subjects out of 105, accounting to 7.6%. In a comprehensive analysis of papaers reporting the factors and causes of risk for stillbirth in low and middle economic nations(2000–13), Aminu et al found that obstetric variables were commonly cited as risk factors for stillbirth. [62] It has been discovered that the mode of delivery and history of prior stillbirth are related to

stillbirth. Stringer EM et al and Yatich et al also stated in their study that previous bad obstetric history were associated with stillbirth. [58,67]

Distribution of subjects according to decreased Fetal movement

In this study, 103 out of 105 subjects that is 98.1% had history of decreased perception of foetal movements. One established method to lower the incidence of stillbirth is to increase awareness among pregnant women and doctors of reduced or decreased foetal movements. Even while inadequate treatment for pregnant women who have diminished foetal movements is often cited as a contributing cause of loss, lower foetal movement is significantly associated with stillbirth. Women commonly complain that clinicians have not listened to their worries about decreased fetal movements seriously and that many of them postpone notifying. There is a lot of false information regarding fetal movements.[71] Women are often informed, for instance that decreasing fetal activity at term is normal because the child is 'running out of space' or that it may be resolved by the woman drinking a glass of water.

These details may cause a presentation delay and decreased fetal movement. The window of opportunity for useful evaluation and intervention may be expanded by minimizing delayed presentation for decreased fetal movements. It is well acknowledged that practice improvement activities targeted at increasing awareness of decreased fetal movements are a key stillbirth prevention approach.[71]Similar to this, Mutihir JT et al. evaluated a large cross-sectional research with 998 deliveries which stated that decreased perception of fetal movements leads to foetal death.[74] Also, reduced fetal movements are important factors for assessing stillbirth as stated by Stringer EM et al in their study which is in line with the present study.[67]

Subjects are distributed as per the delivery method.

The research aims to find the risk variables for antepartum IUFD and to determine the probable cause of antepartum foetal demise, 87 had a vaginal delivery, which is about 82.9% and 18 had undergone LSCS, that is 17.1%. Sharma et al. identified the maternal-foetal traits and factors contributing to stillbirth in Nepal.[56] Only four (5.1 percent) of the 5282 institutional deliveries carried out during two years were cesarean sections, out of which the most (75; 94.9 percent) were vaginal births ($p<0.0001$). In a systematic series of research presenting the factors and causes of risk for stillbirth in low- and middle-economies nations (2000-2013), Aminu et al. noted that obstetric factors were commonly cited as risk factors for stillbirth.[62] It has been discovered that the mode of delivery and history of prior stillbirths are related to stillbirth. According to earlier systematic studies, inadequate antenatal care, absence of a trained attendant at delivery, poor socio-economic status, inadequate nutrition, previous stillbirths and advanced maternal age were the most commomnly documented reasons of stillbirths in underdeveloped nations. [63,72]

Table 25:- Comparison of mode of delivery in various studies

S.NO	STUDY	YEAR	RESULT
1.	Present study	2022	87 had vaginal delivery, which is about 82.9% and 18 had undergone LSCS, that is 17.1%.
2.	Sharma et al [56]	2021	(75; 94.9%) were vaginal delivery and only four (5.1%)required a caesarean section
3.	Aminu et al [62]	2014	An important risk factor for antepartum IUFDis inadequate antenatal care and an untrained attendant durimg birth.

Distribution of subjects according to sex of baby.

In this study, 60 (57.15%) of them had dead male fetuses and 45(42.85%) were female fetuses. According to several studies, transcription of Y chromosome-linked

genes begins at the two-cell stage, and in mice models, male embryos develop more quickly and have greater metabolic rates than female embryos. As a result, the male foetus may be more susceptible to a variety of stressors, such as endocrine changes, nutritional deficiency, and oxidative stress. Recent scientific investigation in animal models has shown that placental development in males is more vulnerable to nutritional deficit than that in females and that placental gene expression in the murine placenta is adaptable and changed with nutrition. Male newborns have higher premature birth risks than female babies, and studies have shown that pregnancies complicated by preterm delivery vary sex-specifically in placental functioning as well as structure.[73] According to Singh N. et al., a large Indian 40 obstetric cohort exhibited a male preponderance and a greater frequency of IUFD during term pregnancy (69 percent) in comparison to PT (31 percent).[57] While Feresu et al. discovered no statistically considerable difference in the probability of stillbirth in males and females, Manocha et al. analyzed the placentas of IUFD patients and determined that the female fetuses exceeded the male with a ratio of male-to-female i.e., 1: 1.7.[59,74]

Table 26:- Comparison of sex of fetuses in various studies

S.NO	STUDY	YEAR	RESULT
1.	Present study	2022	60 (57.15%) of them had dead male fetuses and 45(42.85%) were female fetuses
2.	Feresu et al. [74]	2004	There is no statistically significant variation in the stillbirth risk between the genders.
3.	Singh N et al [57]	2013	Preterm pregnancy (31%) compared to term pregnancy (69%) with a male predominance
4.	Manocha et al [59]	2019	Female fetuses outnumbered the male

Distribution of subjects according to birth weight.

In this study, Most of the intra uterine fetal demise belonged to fetal weight less than 1.5 kg accounting to 47.6%. Young women had a greater risk of LBW and PTB newborns, according to a latest meta-analysis that looked at the connection between early pregnancies and unfavorable birth results globally. Sharma et al. identified the maternal-fetal traits and contributing factors in stillbirth in Nepal and also studied the distribution of subjects according to birthweight. It was determined that this study's findings on IUFD and the percentage of deaths among low-weight fetuses were both high (63.3 percent).[56] Briggs et al. in their retrospective chart review concluded LBW (<2500g) accounted for 10.1% of young; 4.3% of adults.[75]

Jain et al. stated LBW (<2500g) accounts for 1.9% of young; 0.7% of adults. [76] Briggs claimed in his research that birth weight is the most significant predictor of perinatal morbidity and death as well as an essential indicator of neonatal maturity and health. In his research, a group of teenagers delivered babies that, on average, weighed 157 g less than babies given to adults, but the difference was not statistically considerable when smoking, BMI, age, and anemia were taken into account. A few findings discovered that babies born to young moms are smaller and more probably to be underweight, and some also discovered a link to socioeconomic level.

Distribution of subjects according to fresh/Macerated.

88 out of 105 deliveries were fresh intrauterine fetal demise, that is about 83.8% and 17 (16.2%) of them were macerated babies. Sharma et al analyzed the distribution of subjects according to the kind of stillbirths and identified the maternal-foetal features and causes of stillbirth in Nepal. They also discovered that macerated stillbirths (58.2%) were more prevalent than fresh stillbirths (41.8 percent). Stringer et al. observed no connection with fresh stillbirth but revealed a statistically considerable link between diabetes and hypertension and macerated stillbirth (OR 1.40 [1.11-1.75] and 3.86 [1.27-11.70]. correspondingly)[68]. According to Thakur A. et al., the proportionality of macerated stillbirths was greater than that of fresh-type stillbirths, stating several fetuses typically die before patient arrive at the hospital for delivery.[77] This discovery emphasizes the need of educating mothers about the warning indications of IUD or related complications. And this statement was consistent with the findings of Singh N, but Aminu et al. reported in their analysis that the categorization of stillbirth as "fresh" or

"macerated" is currently very widespread, with roughly half of the available literature using it.[57,62] But far too often, this is the only category used.

Maternal Factors

In this study, Preeclampsia (28.57%), eclampsia (14.28%), and HELLP syndrome (3.80%) accounted for about 46.65% of the maternal factors. Comparable to the current study Preeclampsia (39 percent) was the most prevalent obstetric complication linked to IUFD, according to research by Manocha et al.[59] and hypothyroidism was the most frequent medical history among the women in this group. Then, in a subsequent study, Sharma et al identified the maternal-fetal traits and contributing factors to stillbirth in Nepal. [47] Maternal hypertension (23; 29.1%) and maternal endocrine diseases were the most prevalent among those with a known etiology (4; 5.1 percent). In hypertensive mothers, the stillbirth rate was 4 per 1000 babies (23 of 5282 deliveries). Stringer et al. observed no connection with fresh stillbirth but revealed a statistically considerable link between macerated stillbirth and hypertension and diabetes (OR 1.40 [1.11-1.75] and 3.86 [1.27-11.70] correspondingly.[68] According to a study by Baergen et al, MVM ("Maternal vascular malperfusion) was the most frequent obstetric complication and hypertensive problems of pregnancy were the most common cause of IUFD in both term as well as preterm pregnancies. These results agree with the outcomes of the previous research. [78,57 58,79] Between entering prenatal care and 26 to 35 weeks of gestation as well as between entering and birth, adolescents saw a larger decline in hemoglobin (Hb) than adults. At all stages of pregnancy, a much larger proportion of adolescents than adults had anemia.[75] One of the most prevalent endocrine issues

in pregnant women is thyroid abnormalities. It is now well-accepted that poor outcomes for the foetus and mother may result from both overt and subclinical thyroid disorders. Numerous reports concluded that prenatal thyroid screening is crucial since it might have considerable negative consequences on both the mother and the fetus.[80] Preterm birth, macrosomia, preeclampsia, shoulder dystocia, FGR, IUFD, and kidney and cardiac abnormalities are all heightened risks for pregnancies impacted by TIDM.[81] TIDM only impacts a small number of pregnancies annually, yet it is very dangerous for the expectant woman and growing babies. Prenatal and postpartum intensive counseling seems to lower the risk of problems and congenital anomalies. The complexity of care is increased by individualized glycemic control strategies and frequent follow-up appointments, especially in noncompliant patients.[82]

Table 27:- Comparison of maternal factors in various studies

S.NO	STUDY	YEAR	RESULT
1.	Present study	2022	Preeclampsia (28.57%), eclampsia (14.28%) and HELLP syndrome (3.80%) accounted for about 46.65% of the maternal factors
2.	Sharma et al [56]	2021	maternal hypertensive disorder (23; 29.1%) and maternal endocrine disorders (4; 5.1%)
3.	Manocha et al [59]	2019	preeclampsia (39%)
4.	Stringer et al [67]	2011	a statistically significant association between hypertension and diabetes and macerated stillbirth

Placental / cord Factors

In the present study, 15.23% were showing Abruption, 8.57 % showing cord loop round neck , 4.76 % showing placenta previa, 1.90% showing cord prolapse and 1.9 % showing true knot. IUFD placentas were included in the Manocha et al research, which also noted that difficulties with the umbilical cord are usually listed as significant causes of IUFD.'° Abnormal cord insertions, single umbilical arteries,

true knots, and cord entanglements can be linked with stillbirth in addition to vascular events, but these lesions alone might not cause IUFD in the absence of a thrombotic event because these characteristics are also mostly observed in pregnancies that end normally.[83] Clinically, cord entanglement and a cord around the neck were seen in 26 instances. In his study, Walfisch A noted that fetal/placental variables such as placental abruption and FGR are among the most significant and well-researched risk factors for IUFD.[61] In Nepal, Sharma et al. identified maternal-foetal features and reasons for stillbirth. Among the prevalent causes identified in their research were intrauterine infection (7; 8.9 percent), foetal malpresentation (6; 7.6 percent), and cord accidents (4; 5.1 percent).[47] Congenital abnormalities were seen in four of the newborns: hydrops fetalis, anencephaly, spina bifida, and omphalocele. In their investigation, Kuti O. et al. and Turnbull E. et al. discovered that umbilical reasons were often cited as the cause of 2.9-12% of stillbirths.[84,85]

Table 28:- Comparison of placental/cord factors in various studies

S. NO	STUDY	YEAR	RESULT
1.	Present study	2022	15.23% were showing Abruption, 8.57 % showing cord loop round neck , 4.76 % showing placenta previa, 1.90% showing cord prolapse and 1.9 % showing true knot
2.	Manocha et al [59]	2019	IUFD is commonly attributed to difficulties with umbilical cord
3.	Walfisch A [61]	2016	Placental abruption was the common cause
4.	Sharma et al [56]	2021	Fetal malpresentation (6; 7.6%), intrauterine infection(7;8.9%), cord accident (4; 5.1%

Fetal Factors

Impaired placental perfusion resulting in placental insufficiency is the principal factor causing fetal growth limitation. Fetal anomalies and environmental issues such as maternal illness, congenital infection, and maternal substrate abuse are other factors. It is believed that poor trophoblast invasion of the maternal spiral arteries results in impaired placental perfusion.[86] The decreased risk after antenatal identification demonstrates the possible preventability of stillbirths linked to fetal growth limitation. The risk of stillbirth is 8-times higher in FGR pregnancies, although it is decreased when it is discovered, but not to the same extent as in non-FGR pregnancies. This is probably related to the fact that deliveries are often postponed, either because of unwarranted complications or worries about newborn immaturity. In contrast, if FGR is present but undetected, the risk is much greater.[87]

So in the present study, Prematurity (21.9%) was the most associated risk factor for antepartum IUFD and Post maturity (1%). Contrary to the current research, Gardosi antepartum IUFD and Post maturity (1%). Contrary to the current research, Gardosi Jet al. reported that the detection rate among the cohort of 389 stillbirths was even lower: 195 (50.1 percent) of the cases showed FGR, and in 160 (82.1 percent) FGR was not recognized antenatally.[87] In the group of mothers who were obese, there were more incidences of LBW (Low Birth Weight) (13.3 percent vs 5.4 percent) and FGR than in the women with normal BMI (5.2 percent vs 2.0 percent).[88] In his research, Khong TY noted that around one-third of the patients included HCA(histological chorioamnionitis), which was of varying severity.[83] According to Bernstein et al. there is a higher risk of newborn mortality when there is intrauterine growth restriction between 500g and 1500g at delivery. Fetal growth

limitation caused a 4-times rise in the stillbirth rate compared to pregnancies with normal development, and if the growth restriction was not identified antenatally, the stillbirth rate rose to an eightfold rise. Better prenatal identification must become the keystone and primary factor of efficacy and safety in maternity care since FGR is now overlooked in the majority of pregnancies.[86] IUD or FGR may have maternal, fetal, or placental causes. Though the majority of the time, a risk factor or underlying reason for FGR/IUD can be found, in certain cases, the exact cause is still unknown. Many researchers have tried to pinpoint the risk factors or cause through clinical research or by looking at the placenta.

Table 29:- Comparison of fetal factors in various studies

S.NO	STUDY	YEAR	RESULT
1.	PRESENT STUDY	2022	Prematurity (21.9%) was the most associated risk factors for antepartum intra uterine foetal demise
2.	Gardosi J et al [86]	2013	FGR was present in 195 (50.1%) of the cases and was linked to risk factors for antepartum intra uterine foetal demise
3.	. Khong TY [83]	2003	If fetal growth restriction was not discovered antenatally, the stillbirth incidence rose to eight times high.

Congenital anomalies - In their research, Manocha et al. found that early PT (preterm) babies were more likely (65 percent) to have IUFD. Six foetuses had congenital abnormalities found on ultrasonography, with one instance of each of the following: congenital diaphragmatic hernia, dysmorphic features, low set ears, bilateral fetal pelvictasia, suspected skeletal dysplasia, and multicystic dysplastic kidney. [59] Additionally, Mosuwan et al. observed that four out of 24 stillbirths were caused by congenital defects such as thanatophoric dysplasia, anencephaly, and diaphragmatic hernia.[66]

SUMMARY

From January 2021 to December 2022, patients hospitalised with intra uterine foetal demise at Tamaka, Kolar, R L Jalappa hospital attached to Sri Devaraj Urs academy of higher education and research were the subject of this prospective observational study.

In the current study, 41 percent of the 105 subjects were among 21-25 years age followed by 27.6% belonged to 26-30 years age. 63(60 percent) had high school followed by 23.8% were graduate. 43.8% subjects belonged to upper middle class, followed by lower middleclass 36.2%. 61 of 105 subjects that is 58.1% were multigravida and 41.9% were primigravida and 58.1% had consanguineous marriage. 7.6% had previous history of intrauterine foetal demise with a significant positive history of decreased perception of foetal movements noted in 98.1% of 105 subjects. Out of 105 subjects, we observed that 84.8% were booked outside and referred and 15.2% had no prior antenatal visits.

With respect to the outcome of the pregnancy 87 had vaginal delivery and 17.1% had undergone caesarean section with 7.6% being vaginal birth after caesarean section and 57.15% constituted male fetuses and 42.85% female fetuses. Most of the intra uterine fetal demise belonged to very low birth weight (less than 1.5kg) accounting to 47.6 percent of which all belonged to less than 28 weeks gestation which is significant in my study. 83.8 percent were fresh intrauterine fetal demsie and 17(16.2%) were macerated fetus. Hypertensive disorders of pregnancy accounted for 46.65% of the maternal factors, followed by anemia 19.04%. Majority 16(15.23%) had placental abruption, followed by nuchal cord round neck

in 9 out of 105 subjects (8.57%). Foetal growth restriction accounted to 26.66% followed by 21.9% foetuses premature.

Conclusion:

In the present study preeclampsia-eclampsia were the main contributors for intrauterine foetal demise followed by anaemia and abruptio placenta. Statistically significant difference was found between birth weight and gestational age, attributing to the foetal growth restriction leading to IUFD. Decreased perception of foetal movements was seen in majority of the cases.

Most of the cases of IUFD in our study were preventable. Prevention and early diagnosis of preeclampsia and prompt referral, adequate treatment and timely delivery can help to prevent IUFD. Improving the maternal nutrition and prevention and adequate treatment of anaemia in pregnancy is important in preventing stillbirth. Educating the women about foetal movement count and to approach the health care facility in case of decreased perception of foetal movements at the earliest for active intervention and management.

Good antenatal care and detection of risk factors like preeclampsia, anemia, FGR, congenital malformations are necessary to plan the next level of management.

Limitations:

Limitations of this study are its small sample size. Chromosomal studies have not been done. Multicenter study will give better idea about the causes of stillbirths prevalent in this area. This study is one of the few studies reported from this state on this important aspect. The knowledge about reason for the fetal loss can help in taking measures to prevent recurrence in subsequent pregnancies.

RECOMMENDATIONS:

The findings suggest that, currently, the most important aspects of stillbirth investigation include clinical review, external examination and/or imaging for structural abnormalities, and specialist placental examination; these should be encouraged in all cases.

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ANNEXURE I
CASE PROFORMA

NAME: **IP NO:**

AGE: **DOA:**

OCCUPATION: **DOD:**

ADDRESS:

EDUCATION:

HUSBANDS
NAME
OCCUPATION:
SOCIOECONOMIC STATUS:
CHIEF COMPLAINTS:

HISTORY OF PRESENT ILLNESS:

OBSTETRIC HISTORY:

Marital life: Consanguinity:
Gravida: Para: living: Abortion: Dead:
Details of previous pregnancy:
Details of present pregnancy:

MENSTRUAL HISTORY:

Last menstrual period: Age of menarche:
Expected delivery date:
Period of gestation:
Past menstrual cycles:

PAST HISTORY:

Hypertension /Diabetes Mellitus/Bronchial Asthma/Tuberculosis /Blood Dyscrasias/ Epilepsy/ Thyroid Disorder/ Cardiac Disease/Allergy
H/o blood transfusions:
H/o Surgeries or hospitalization:

PERSONAL HISTORY:

Diet:
Sleep and appetite:

Bowel and bladder:

FAMILY HISTORY:

DRUG HISTORY:

GENERAL EXAMINATION:

General condition: Fair/ moderate/ Poor

Built: Nourishment:
Ht: cms Wt: kgs BMI: Pallor:
Icterus: Cyanosis:
Clubbing:

Lymphadenopathy:

Edema:

VITALS:

Pulse rate: Respiratory rate:

Blood pressure: Temperature:
Breast: Spine: Thyroid:

SYSTEMIC EXAMINATION:

Cardiovascular system:
Respiratory system:
Central nervous system:

Per abdomen: Uterus size:

Relaxed /Irritable /Acting
Presentation: cephalic/ Breech/ other

LOCAL EXAMINATION:
Per Speculum: leaking PV Vaginal discharge

Per Vaginal examination: Effacement:

Dilatation:

Station:

Membranes:

Consistency

Os position

Pelvimetry:

PROVISIONAL DIAGNOSIS:

INVESTIGATIONS:

Blood group and Rh typing:

CBC: HB: HIV:

PCV: HbsAG:

RBC: VDRL:

WBC:

PLT:

Urine analysis: Albumin-
Sugar

Coagulation Profile: PT APPT INR

■ Maternal Serology: Viral Rubella Others: Toxoplasma if indicated

■ Maternal Blood Sugar estimation:

■ Thyroid Profile:

OBSTETRICS SCAN:

Obstetric Management

■ Induction of Labor: Spontaneous/Vaginal delivery/Cesarean section and indication of cesarean section

Course of labor: ■ Drug use: ■ Antibiotics/Broad Spectrum

Examination of the fetus :

a) Wt(gm/Kg)

b) Sex:

c) External (Exam.)

ANNEXURE II
PATIENT INFORMATION SHEET

Patient information sheet

Study title: "ANALYSIS OF INTRAUTERINE FETAL DEMISE IN A TERTIARY CARE HOSPITAL**".**

Study site: R L Jalappa Hospital and Research Centre, Tamaka, Kolar.

This is to inform you that, we are conducting a study for the diagnosis of the cause of intrauterine foetal demise

If you are willing you will be enrolled in this study and we will do ultrasound and other relevant investigations which are required for study purpose.

This will facilitate identifying cause of intrauterine foetal demise in an early stage. It will also benefit other patients in future. You are free to opt-out of the study at any time if you are not satisfied or apprehensive to be a part of the study. Your treatment and care will not be compromised if you refuse to be a part of the study. The study will not add any risk or financial burden to you if you are part of the study. In case of any complication during surgery patient will be treated accordingly.

Your identity and clinical details will be confidential. You will not receive any financial benefit for being part of the study. You are free to contact Dr. Nandini Bhavanam or any other member of the above research team for any doubt or clarification you have.

For further information, contact

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Postgraduate,

Department of obstetrics and
gynecology, Sri Devaraj Urs
Medical College, Kolar.

ರೋಗಿಯ ಮಾಹಿತಿ ಹಾಳೆ

ಅಧ್ಯಯನದ ಶೀರ್ಷಿಕೆ: "ತೃತೀಯ ಆರೈಕೆ ಆಸ್ಪತ್ರೆಯಲ್ಲಿ ಇಂಟ್ರಾಟ್ಯುರಿನ್ ಭ್ರೂಣದ ವಿಶ್ಲೇಷಣೆ"
ಅಧ್ಯಯನ ಸೈಟ್: ಆರ್.ಎಲ್ ಜಲಪ್ಪ ಆಸ್ಪತ್ರೆ ಮತ್ತು ಸಂಶೋಧನಾ ಕೇಂದ್ರ, ತಮಾಕಾ, ಕೋಲಾರ.

ಇದು ನಿಮಗೆ ತಿಳಿಸಲು, ನಾವು ಇನ್ನೂ ಜನನದ ಕಾರಣವನ್ನು ಪತ್ತೆಹಚ್ಚಲು ಅಧ್ಯಯನವನ್ನು ನಡೆಸುತ್ತಿದ್ದೇವೆ

ಗರ್ಭಾಶಯದ ಭ್ರೂಣದ ಮರಣದ ಕಾರಣವನ್ನು ಪತ್ತೆಹಚ್ಚಲು ನಾವು ಅಧ್ಯಯನವನ್ನು ನಡೆಸುತ್ತಿದ್ದೇವೆ ಎಂದು ನಿಮಗೆ ತಿಳಿಸಲು ಇದು ನೀವು ಸಿದ್ಧರಿದ್ದರೆ ನೀವು ಈ ಅಧ್ಯಯನಕ್ಕೆ ದಾಖಲಾಗುತ್ತೀರಿ ಮತ್ತು ಅಧ್ಯಯನದ ಉದ್ದೇಶಕ್ಕಾಗಿ ಅಗತ್ಯವಿರುವ ಅಲ್ಟ್ರಾಸೌಂಡ್ ಮತ್ತು ಇತರ ಸಂಬಂಧಿತ ತನಿಖೆಗಳನ್ನು ನಾವು ಮಾಡುತ್ತೇವೆ.

ಇದು ಆರಂಭಿಕ ಹಂತದಲ್ಲಿ ಕಾರಣವನ್ನು ಗುರುತಿಸಲು ಮತ್ತು ಚಿಕಿತ್ಸೆ ನೀಡಲು ಅನುಕೂಲವಾಗುತ್ತದೆ. ಇದು ಭವಿಷ್ಯದಲ್ಲಿ ಇತರ ರೋಗಿಗಳಿಗೂ ಪ್ರಯೋಜನವನ್ನು ನೀಡುತ್ತದೆ. ನೀವು ಅಧ್ಯಯನದ ಭಾಗವಾಗಲು ತೃಪ್ತಿ ಹೊಂದಿಲ್ಲದಿದ್ದರೆ ಅಥವಾ ಭಯಪಡದಿದ್ದರೆ ನೀವು ಯಾವುದೇ ಸಮಯದಲ್ಲಿ ಅಧ್ಯಯನದಿಂದ ಹೊರಗುಳಿಯಲು ಮುಕ್ತರಾಗಿದ್ದೀರಿ. ನೀವು ಅಧ್ಯಯನದ ಭಾಗವಾಗಲು ನಿರಾಕರಿಸಿದರೆ ನಿಮ್ಮ ಚಿಕಿತ್ಸೆ ಮತ್ತು ಕಾಳಜಿಗೆ ಧಕ್ಕೆಯಾಗುವುದಿಲ್ಲ. ನೀವು ಅಧ್ಯಯನದ ಭಾಗವಾಗಿದ್ದರೆ ಅಧ್ಯಯನವು ನಿಮಗೆ ಯಾವುದೇ ಅಪಾಯ ಅಥವಾ ಆರ್ಥಿಕ ಹೊರೆ ಸೇರಿಸುವುದಿಲ್ಲ. ಶಸ್ತ್ರಚಿಕಿತ್ಸೆಯ ಸಮಯದಲ್ಲಿ ಯಾವುದೇ ತೊಡಕು ಉಂಟಾದರೆ ರೋಗಿಗೆ ಅನುಗುಣವಾಗಿ ಚಿಕಿತ್ಸೆ ನೀಡಲಾಗುತ್ತದೆ.

ನಿಮ್ಮ ಗುರುತು ಮತ್ತು ಕ್ಲಿನಿಕಲ್ ವಿವರಗಳು ಗೌಪ್ಯವಾಗಿರುತ್ತದೆ. ಅಧ್ಯಯನದ ಭಾಗವಾಗಿರುವುದರಿಂದ ನೀವು ಯಾವುದೇ ಆರ್ಥಿಕ ಲಾಭವನ್ನು ಪಡೆಯುವುದಿಲ್ಲ. ನೀವು ಹೊಂದಿರುವ ಯಾವುದೇ ಅನುಮಾನ ಅಥವಾ ಸ್ಪಷ್ಟೀಕರಣಕ್ಕಾಗಿ ನೀವು ಡಾ. ನಂದಿನಿ ಭವನಮ್ ಅಥವಾ ಮೇಲಿನ ಸಂಶೋಧನಾ ತಂಡದ ಇತರ ಸದಸ್ಯರನ್ನು ಸಂಪರ್ಕಿಸಲು ಮುಕ್ತರಾಗಿದ್ದೀರಿ.

ಡಾ.ನಂದಿನಿ ಭಾವಂ

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ಇ-ಮೇಲ್ ಐಡಿ: nbhuvanam@gmail.com

ANNEXURE III

INFORMED CONSENT FORM

Informed consent form

I Mr./Mrs. _____ have been explained in my own understandable language, that i will be included in a study which is **"**ANALYSIS OF INTRAUTERINE FETAL DEMISE IN A TERTIARY CARE HOSPITAL**"**
I have been explained that my clinical findings, investigations and relevant findings will be assessed and documented for study purpose.

I have been explained my participation in this study is entirely voluntary, and i can withdraw from the study any time and this will not affect my relation with my doctor or the treatment for my ailment.

I have been explained about the interventions needed possible benefits and adversities due to interventions, in my own understandable language.

I have understood that all my details found during the study are kept confidential and while publishing or sharing of the findings, my details will be masked.

I have principal investigator mobile number for enquiries.

I in my sound mind give full consent to be added in the part of this study.

Signature of the patient:

Name:

Signature of the witness:

Name:

Relation to patient:

Date:

Place:

ಮಾಹಿತಿ ಕಾನ್ಸೆಂಟ್ ಫಾರ್ಮ್

ನಾನು ಶ್ರೀ / ಶ್ರೀ. _____ ಅನ್ನು ನನ್ನ ಸಂ್ವತ ಅರ್ಥವಾಗುವ ಭಾಷೆಯಲ್ಲಿ ವಿವರಿಸಲಾಗಿದೆ, ಅದು ನನ್ನನ್ನು ಅಧ್ಯಯನದಲ್ಲಿ ಸೇರಿಸಲಾಗುವುದು, ಅದು "ತೃತೀಯ ಆರೈಕೆ ಆಸ್ಪತ್ರೆಯಲ್ಲಿನ ಒಳಹರಿವಿನ ಭ್ರೂಣದ ವಿಶ್ಲೇಷಣೆ"
ನನ್ನ ಕ್ಲಿನಿಕಲ್ ಆವಿಷ್ಕಾರಗಳು, ತನಿಖೆಗಳು ಮತ್ತು ಸಂಬಂಧಿತ ಆವಿಷ್ಕಾರಗಳನ್ನು ಅಧ್ಯಯನದ ಉದ್ದೇಶಕ್ಕಾಗಿ ಮೌಲ್ಯಮಾಪನ ಮಾಡಲಾಗುತ್ತದೆ ಮತ್ತು ದಾಖಲಿಸಲಾಗುತ್ತದೆ ಎಂದು ನನಗೆ ವಿವರಿಸಲಾಗಿದೆ.

ಈ ಅಧ್ಯಯನದಲ್ಲಿ ನನ್ನ ಪಾಲ್ಗೊಳ್ಳುವಿಕೆ ಸಂಪೂರ್ಣವಾಗಿ ಸ್ವಯಂಪ್ರೇರಿತವಾಗಿದೆ ಎಂದು ನನಗೆ ವಿವರಿಸಲಾಗಿದೆ, ಮತ್ತು ನಾನು ಯಾವುದೇ ಸಮಯದಲ್ಲಿ ಅಧ್ಯಯನದಿಂದ ಹಿಂದೆ ಸರಿಯಬಹುದು ಮತ್ತು ಇದು ನನ್ನ ವೈದ್ಯರೊಂದಿಗಿನ ನನ್ನ ಸಂಬಂಧ ಅಥವಾ ನನ್ನ ಕಾಯಿಲೆಗೆ ಚಿಕಿತ್ಸೆಯ ಮೇಲೆ ಪರಿಣಾಮ ಬೀರುವುದಿಲ್ಲ.
ನನ್ನ ಸಂ್ವತ ಅರ್ಥವಾಗುವ ಭಾಷೆಯಲ್ಲಿ, ಮಧ್ಯಸ್ಥಿಕೆಗಳ ಕಾರಣದಿಂದಾಗಿ ಸಂಭವನೀಯ ಪ್ರಯೋಜನಗಳು ಮತ್ತು ಪ್ರತಿಕೂಲತೆಗಳ ಅಗತ್ಯವಿರುವ ಮಧ್ಯಸ್ಥಿಕೆಗಳ ಬಗ್ಗೆ ನನಗೆ ವಿವರಿಸಲಾಗಿದೆ.

ಅಧ್ಯಯನದ ಸಮಯದಲ್ಲಿ ಕಂಡುಬರುವ ನನ್ನ ಎಲ್ಲಾ ವಿವರಗಳನ್ನು ಗೌಪ್ಯವಾಗಿಡಲಾಗಿದೆ ಮತ್ತು ಸಂಶೋಧನೆಗಳನ್ನು ಪ್ರಕಟಿಸುವಾಗ ಅಥವಾ ಹಂಚಿಕೊಳ್ಳುವಾಗ, ನನ್ನ ವಿವರಗಳನ್ನು ಮರೆಮಾಚಲಾಗುತ್ತದೆ ಎಂದು ನಾನು ಅರ್ಥಮಾಡಿಕೊಂಡಿದ್ದೇನೆ.

ವಿಚಾರಣೆಗಾಗಿ ನನ್ನ ಬಳಿ ಪ್ರಧಾನ ತನಿಖಾಧಿಕಾರಿ ಮೊಬೈಲ್ ಸಂಖ್ಯೆ ಇದೆ.

ಈ ಅಧ್ಯಯನದ ಭಾಗದಲ್ಲಿ ಸೇರಿಸಲು ನನ್ನ ಸಂಪೂರ್ಣ ಮನಸ್ಸಿನಲ್ಲಿ ನಾನು ಸಂಪೂರ್ಣ ಒಪ್ಪಿಗೆ ನೀಡುತ್ತೇನೆ.

ರೋಗಿಯ ಸಹಿ:
ಹೆಸರು:

ಸಾಕ್ಷಿಯ ಸಹಿ:
ಹೆಸರು:
ರೋಗಿಗೆ ಸಂಬಂಧ:

ದಿನಾಂಕ:
ಸ್ಥಳ:

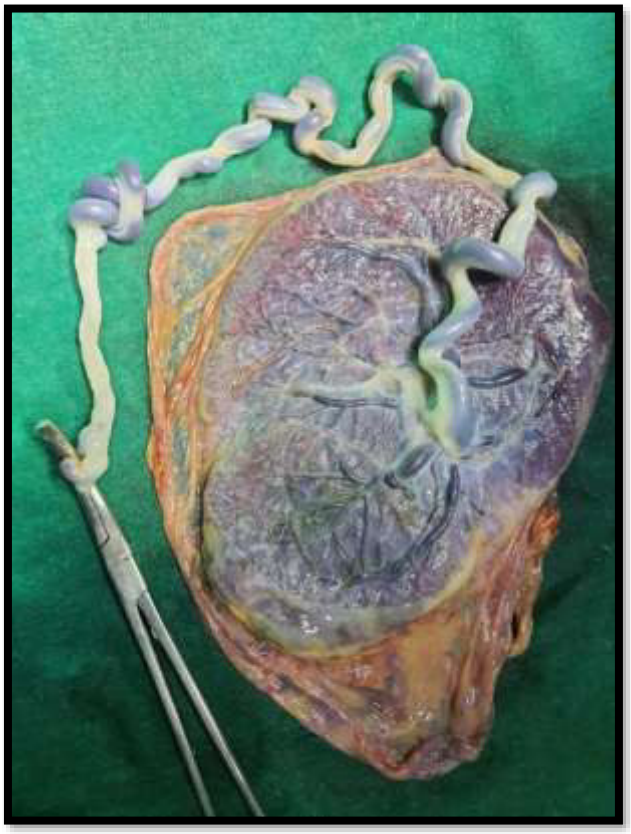
ANNEXURE IV

IMAGES

Fig 18: Large baby with macerated features

Fig 19: Image showing cord around neck

Fig 20: Image of placenta with umbilical cord- showing true knot



ANNEXURE V

KEY TO MASTER SHEET

KEY TO MASTER CHART

INDUCTION OF LABOUR

FOLEY BULB-1

MISOPROSTOL-2

SYNTOCIN-3

DINOPROSTONE GEL -4

MODE OF DELIVERY

VAGINAL DELIVERY-1

CESAREAN SECTION-2

MARRIAGE CONSANGUNUITY

CONSANGUNIEOUS-1

NON CONSANGUINEOUS-2

SEX

MALE-1

FEMALE-2

MATERNAL FACTORS:

PREECLAMPSIA-1

ECLAMPSIA-2

SEPSIS-3

DIABETES-4

OLIGOHYDRAMNIOS-5

ANEMIA- 6

HELLP SYNDROME-7

INFECTIONS-8

AUTOIMMUNE DISORDER-9

INTRAHEPATIC CHOLESTASIS-10

ANTI PHOSPHOLIPID SYNDROME-11

FETAL FACTORS

PREMATURITY-1

POST MATURITY-2

CONGENITAL ANOMALIES-3

RH ISOIMMUNISATION-4

HYDROPS-5

PLACENTAL AND CORD FACTORS

PLACENTA PREVIA-1

ABRUPTIO PLACENTA-2

VILLUS IMMATURITY-3

PLACENTAL CALCIFICATIONS-4

LOOP OF CORD AROUND NECK-5

CORD PROLAPSE-6

TRUE KNOT-7

ANNEXURE-VI- MASTER CHART

S.NO	AGE	EDUCATION	SES	PARITY	CONSANGUINITY	OBSTETRIC H/S	B/UB	FET MOV	MODE DELIEVRY	SEX	WEIGHT	FRESH/MACERATED	MATERNAL	FETAL	PLACENATAL	IDIOPATHIC	INDICATION FOR LSCS	PLACENTAL WEIGHT IN GRAMS	MODE OF DELIVERY
1	33	10	UM	G2P1L1	2	2	B	Y	1	1	2.79KG	FRESH	2 6 3					500	3
2	28	12	LM	G3P2L2	1	1	B	Y	1	1	616GM	FRESH		1		1		200	1 3
3	23		LM	G3P1L1A1	1	2	B	Y	1	1	1.95KG	FRESH	2					400	1 3
4	26	BSC	LM	G3P1L1A1	1	2	B	Y	1	1	1.67KG	FRESH			2			420	3
5	27	11	UM	G2P1L1	1	2	B	Y	1	1	1.02KG	FRESH	2					300	1 2
6	25	12	LM	PRIMI	1	2	B	Y	1	1	1.05KG	FRESH				1		250	
7	34	11	LM	G3P2L2	2	2	B	Y	1	2	3KG	FRESH	1					500	0
8	21	8	LM	PRIMI	2	2	B	Y	1	2	840gms	FRESH	6	1	2 5			300	preterm assisted breech delivery
9	20	12	LM	G2P1L0	1	1	B	Y	1	1	670GM	MACERATED	6	1	2			300	2
10	37	BSC	LM	G3P2L1D1	2	1	B	Y	2	1	3.18KG	FRESH				1		500	
11	28	BA	UM	PRIMI	2	2	B	Y	2	2	2.46KG	FRESH	1		6		SHOULDER DYSTOCIS	480	
12	22	10	LM	G2A1	2	2	B	Y	2	1	1.26KG	FRESH	1				FAILED INDUCTOIN - ASCITIES 1 LITER, LUS NOT FORMED	380	
13	22	12	LM	G2P1L1	2	2	NB	Y	1	2	850GM	MACERATED	1		2			380	3
14	27	11	LM	PRIMI	2	2	B	Y	1	2	2.0KG	FRESH	1		6			350	2 3
15	21	8	UM	G2P1L1	2	2	B	Y	1	1	1.85KG	FRESH		1	2			360	3
16	23	10	UM	G2P1L1	2	2	B	Y	1	1	1.67KG	FRESH	1					350	1 3
17	44	12	LM	PRIMI	1	2	B	Y	1	1	2.88KG	FRESH				1		400	
18	18	BSC	UM	G2A1	1	2	NB	Y	1	2	2.56KG	FRESH	1		2			450	3
19	28	BA	UM	G2A1	1	2	NB	Y	1	1	2.82KG	FRESH				1		450	
20	19	BBA	LM	G2A1	1	2	B	Y	1	2	1.05KG	FRESH	1 7	1				280	1 2
21	23	11	UM	PRIMI	1	2	B	Y	1	2	1.92KG	MACERATED	1			1		480	3
22	22	12	LM	G3P2L2	1	2	B	Y	1	1	1.37KG	FRESH	6	1				300	1 3
23	30	10	UM	G3P2L2	2	2	B	Y	1	2	1.54KG	FRESH	6	1	2			320	3
24	19	6	LM	PRIMI	2	2	B	Y	2	1	1.7KG	FRESH		1	1		COMPLETE PLACENTA PREVIA COUVLAIRE UTERUS ATONIC	400	

																PPH 500GMS CLOTS BL UTERINE ARTERY LIGATION DONE		
25	22	8	UM	PRIMI	2	2	B	Y	1	1	950GM	MACERATED		1	5			310	1 3
26	24	10	LM	G2P1L1	2	2	NB	Y	1	1,1	1.37KG,1.04KG	FRESH		1		1		180	3
27	24	12	LM	PRIMI	1	2	NB	Y	1	1	1.44KG	FRESH	6		2			240	1 3
28	28	BA	UM	G2P1L1	1	2	B	Y	1	2	2.73KG	FRESH			7			480	1 3
29	27	BSC	LM	PRIMI	1	2	B	Y	1	2	2.5KG	MACERATED				1		500	
30	28	BA	UM	G2P1L1	2	2	B	Y	1	2	1.59KG	FRESH			2			520	1 3
31	22	11	LM	G3P2L1D1	2	1	NB	Y	1	1	1.98KG	FRESH	2 6		2			510	3
32	33	10	LM	G2P1L0	2	1	B	Y	2	2	3.86KG	FRESH	1 4				OBSTRUCTED LABOUR	450	
33	20	BSC	UM	PRIMI	2	2	B	Y	1	2	1.O7KG	FRESH		1				200	1 2 3
34	23	10	UM	PRIMI	2	2	B	Y	2	1	3.26KG	FRESH	1 4				OBSTRUCTED LABOUR-MECONIUM STAINED LIQUOR	480	
35	25	12	LM	G3P1L1A1	2	2	B	Y	1	2	2.62KG	FRESH	1 6		2			520	2 3
36	23	10	UM	PRIMI	1	2	B	Y	1	1	2.6KG	FRESH				1		480	1 2 3
37	25	12	UM	G2A1	1	2	B	Y	1	1	1.26KG	FRESH	1					400	1 2 3
38	24	12	LM	G4P3L2D1	1	1	B	Y	1	2	1.11KG	MACERATED	6					280	2 3
39	26	10	UM	G2P1L1	1	2	B	Y	1	1	1.02KG	FRESH				1		280	1 2
40	25	BA	LOWER	G3P2L2	1	2	B	Y	2	2	3.67KG	FRESH					POSTMORTEM C SECTION	530	
41	29	LLB	LM	PRIMI	1	2	B	Y	1	2	700GM	FRESH				1		180	2 3
42	30	BCOM	UM	G2P1L1	1	2	B	Y	1	2	900GM	FRESH				1		180	2 3
43	28	10	UM	G2P1L1	1	2	NB	Y	2	2	1.9KG	MACERATED				1	PREVIOUS LSCS NOT WILLING	430	
44	38	11	LM	G5P3L3A1	1	2	B	Y	1	2	1.25KG	FRESH	1 6		1			300	1 2 3
45	21	12	UM	PRIMI	1	2	B	Y	1	1	1.05KG	MACERATED			1		31W APH	300	1 2 3 4
46	27	12	LM	G3P1L1A1	2	2	B	Y	2	1	2.08KG	FRESH		1		PREVIOUS LSCS BREECH IUD		320	
47	22	11	UM	G2P1L1	2	2	B	Y	1	1	2.6KG	FRESH	6		5			500	3
48	20	12	LOWER	PRIMI	2	2	B	Y	1	2	1.57KG	FRESH	1	2				500	1 2
49	35	11	UM	G3P2L2	2	2	B	Y	1	2	640GM	FRESH		1		1		220	3
50	29	12	LOWER	PRIMI	1	2	B	Y	2	1	2.02KG	MACERATED		1		1	PRETERM BREECH FAILED INDUCTION	390	
51	22	11	UM	PRIMI	1	2	B	Y	1	1	2.5KG	FRESH	1 7		2			550	1 2 3
52	30	11	UM	G4P1L1A2	2	2	B	Y	1	1	3.6KG	FRESH	4		5			540	1 2 3
53	20	12	LM	G2P1L1	1	2	B	Y	1	1	1.09KG	FRESH	6		2			560	1 2 3
54	22	10	UM	PRIMI	2	2	B	Y	1	1	1.25KG	FRESH	4					230	1 2 3
55	28	8	UM	G2P1L1	1	2	NB	Y	1	2	1.9KG	FRESH		1		1		500	1 2 3

56	26	6	UM	G5P4L1	2	1	B	Y	1	1	740GM	FRESH	1					170	1 3
57	24	5	LOWER	PRIMI	1	2	B	Y	1	2	710GM	MACERATED	1	1				200	1 2 3
58	22	BSC	LM	PRIMI	2	2	B	Y	1	1	1.25KG	FRESH				1		290	1 2 3
59	20	BCOM	UM	PRIMI	2	2	B	Y	1	1	840GM	FRESH		1				280	1 2 3
60	22	10	UM	PRIMI	2	2	B	Y	1	1	1.33KG	FRESH	1		1			270	2 3
61	20	9	LM	G2A1	1	2	NB	Y	1	2	1.03KG	MACERATED	6		3			140	1 2 3
62	27	8	UM	G2P1L1	2	2	B	Y	2	1	4.24KG	FRESH	4			PREVIOUS LSCS WITH OVERT DM		460	
63	23	8	UM	PRIMI	1	2	B	Y	2	1	2.5KG	FRESH				1	previous lscs	480	
64	31	7	LOWER	G3P1L1A1	1	2	B	Y	1	1	640GM	FRESH				1		160	2 3
65	19	6	LOWER	PRIMI	2	2	B	Y	1	2	1.8KG	FRESH	1		2			510	1 2 3
66	19	10	LM	PRIMI	1	2	B	Y	1	1	2.5KG	FRESH				1		490	1 2 3
67	40	10	UM	G3P2L2	1	2	B	Y	1	2	1.1KG	MACERATED	2	1				320	1 2 3
68	30	11	LOWER	G2P1L1	1	2	B	Y	1	1	2.05KG	FRESH	2 5					490	1 2 3
69	23	11	LOWER	PRIMI	2	2	B	Y	1	1	2.87KG	FRESH				1		500	1 2 3
70	21	12	UM	PRIMI	1	2	NB	Y	1	1	1.10KG	FRESH	6		5			300	1 2
71	17	7	LOWER	PRIMI	2	2	B	Y	1	2	1.23KG	FRESH	1		5			340	1 2 3
72	20	BA	LM	PRIMI	2	2	B	Y	1	2	1.25KG	FRESH				1		100	1 3
73	25	BCOM	UM	G2P1L1	2	2	B	Y	1	1	1.61kg	FRESH		1	5			150	1 2 3
74	31	11	LM	G2PL1	2	2	NB	Y	2	1	3.336kg	FRESH	1 7	1			PREVIOUS LSCS IN HELP SYMDROME	400	
75	30	12	UM	PRIMI	2	2	NB	Y	1	2	1.06kg	MACERATED	4					200	2 3
76	35	10	UM	G5P1L1A3	1	2	B	Y	2	1	1.34kg	FRESH	1				PREVIOUS LSCS WITH IUD QITH PREECLMAPSIA	200	
77	24	9	LOWER	G2P1L1	1	2	B	Y	1	1	2.9kg	FRESH	2 7		5			400	1 2 3
78	22	8	LOWER	PRIMI	1	2	B	Y	1	2	3KG	FRESH				1		500	4 3
79	18	7	LOWER	G2A1	2	2	B	Y	1	2	1.16kg	FRESH	2					200	3
80	18	BA	LOWER	PRIMI	2	2	B	Y	1	1	2.28kg	FRESH	2					180	1 2 3
81	27	BA	LM	G3P2L2	1	2	B	Y	1	1	970gm	FRESH	1 6		2			280	2 3
82	32	BA	LOWER	G2P1L1	1	2	B	Y	1	1	2.85kg	FRESH	4	1				300	4 3
83	26	10	UM	G4P2L2A1	1	2	B	Y	1	1	881gm	MACERATED	6	1				150	1 3
84	29	12	LM	PRIMI	1	2	B	Y	1	1	2.14kg	FRESH	1	1				390	1 2 3
85	21	10	UM	G2A1	1	2	B	Y	2	1	2.8KG	FRESH	6				previous lscs	490	
86	29	12	UM	G2A1	1	2	B	Y	1		2.20KG	FRESH				1		480	4 3
87	19	12	LM	PRIMI	2	2	B	Y	1	1	600GM	FRESH	1 6					150	2 3
88	20	10	UM	PRIMI	1	2	B	Y	1	2	2KG	FRESH				1		200	1 2 3

89	30	BA	LM	G2P1L1	2	2	B	Y	1	2	640GM	FRESH	2					150	1 2 3
90	27	BA	UM	PRIMI	2	2	B	Y	1	2	3.7KG	FRESH	4					510	4 3
91	23	12	LM	G3P1L1A1	2	2	B	Y	1	1	1.18KG	FRESH	2					300	1 2 3
92	27	10	LM	G2A1	1	2	NB	Y	1	2	700GM	MACERATED	2					150	1 2 3
93	20	12	LOWER	PRIMI	1	2	NB	Y	1	2	680GM	FRESH	1					150	2 3
94	35	10	UPPER	G3P1L1A1	1	2	NB	Y	1	1	2.71KG	FRESH				1		480	1 2 3
95	22	12	UPPER	G2P1L0	1	2	B	Y	1	1	1.77KG	FRESH	1					320	1 2 3
96	23	10	UM	PRIMI	1	2	B	Y	1	2	2.3KG	FRESH				1		380	4 3
97	25	12	LOWER	G3P2L2	2	2	B	Y	1	1, 2	660GM, 1.05KG	MACERATED	6					300	4 3
98	34	10	LM	PRIMI	2	2	B	Y	1	1	990GM	FRESH	2					150	1 2 3
99	19	12	LOWER	G2P1L1	1	2	NB	Y	2	2	1.9KG	FRESH	6			2	PREVIOUS LSCS WITH ABRUPTIO PLACENTA	400	
100	22	10	LOWER	PRIMI	2	2	B	Y	1	1	1.62KG	FRESH	2					200	1 2 3
101	22	9	MIDDLE	PRIMI	1	2	R	Y	1	2	1.07KG	FRESH	1					200	1 2 3
102	22	12	UPPER MIDDLE	G3P1L0A1	2	1	B R		2	2	1.1	FRESH			1		plcantta previa	200	
103	23	DEGREE	UM	PRIMI	2	2	B R	Y	1	2	1.24	FRESH	12		5			260	2 3
104	22	DEGREE	UM	PRIMI	2	2	B R	Y	1	2	900GMS	FRESH	1					160	2 3
105	23	10	UM	G2P1L1	2	2			2	1	3.4KG	MACERATED			2		PREVIOUS LSCS WITH ABRUPTIO	540	