A COMPARATIVE STUDY ON FETOMATERNAL OUTCOME IN EXTREMES OF REPRODUCTIVE AGE

A Dissertation submitted to

THE TAMILNADU DR. M.G.R MEDICAL UNIVERSITY
CHENNAI

In partial fulfillment of the regulations for the award of the degree of

M.D (OBSTETRICS AND GYNAECOLOGY) – BRANCH - II

REGISTER NUMBER: 221816204

THANJAVUR MEDICAL COLLEGE

THANJAVUR - 613004

THE TAMILNADU DR. M.G.R. MEDICAL UNIVERSITY

CHENNAI, TAMILNADU

May 2021

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This is to certify that the dissertation titled **"A COMPARATIVE STUDY ON FETOMATERNAL OUTCOME IN EXTREMES OF REPRODUCTIVE AGE"** is a bonafide work done by **Dr. P.KALAISELVI,** Post graduate student, Department of obstetrics and Gynaecology, Thanjavur Medical college, Thanjavur – 04, during the period **JANUARY 2019 TO DECEMBER 2019** in partial fulfillment of rules and regulations of The Tamilnadu Dr. M.G.R Medical University, for the award of MD Degree Branch II (Obstetrics and Gynaecology) examination to be held in **May 2021 .**

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CERTIFICATE

This is to certify that the dissertation titled **"A COMPARATIVE STUDY ON FETOMATERNAL OUTCOME IN EXTREMES OF REPRODUCTIVE AGE"** is a bonafide work done by **Dr.P.KALAISELVI,** Post graduate student, Department of obstetrics and Gynaecology, Thanjavur Medical college, Thanjavur, under my guidance and supervision in partial fulfillment of rules and regulations of The Tamilnadu Dr. M.G.R Medical University, for the award of MD Degree Branch II (Obstetrics and Gynaecology) examination to be held in **May 2021 .** The period of study was from **January 2019 to December 2019.**

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This is to certify that The Research Proposal / Project titled

COMPLICATIONS AND FETOMATERNAL OUTCOME OF PREGNANCIES IN EXTREMES OF REPRODUCTIVE AGE GROUPS

submitted by Dr. P. KALAISELVI **of**

Dept. of OBSTETRICS & GYNAECOLOGY **Thanjavur Medical College, Thanjvur**

was approved by the Ethical Committee.

Thanjavur

Dated : 22-11-2018

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Ethical Committee
TMC, Thanjavur.

URKUND

Document Information

Analyzed document	feromaternal outcome in extremes of age group.docx (D89244299)
Submitted	12/14/2020 11:58:00 AM
Submitted by	Kalaiselvi
Submitter email	toreachkavipandian@gmail.com
Similarity	4%
Analysis address	toreachkavipandian.mgrmu@analysis.urkund.com

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This is to certify that this dissertation work titled **"A COMPARATIVE STUDY ON FETOMATERNAL OUTCOME IN EXTREMES OF REPRODUCTIVE AGE"** of the candidate **Dr.P.KALAISELVI** with Registration Number **221816204** for the award of MD degree in the branch of Obstetrics & Gynaecology. I personally verified the urkund.com website for the purpose of plagiarism check. I found that the uploaded thesis file contains from introduction to conclusion pages and result shows **4** percentage of plagiarism in the dissertation.

Prof.Dr.R.RAJARAJESWARI MD.,DGO.,DNB,
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DECLARATION

I solemnly declare that this dissertation titled **"A COMPARATIVE STUDY ON FETOMATERNAL OUTCOME IN EXTREMES OF REPRODUCTIVE AGE"** was done by me at Department of Obstetrics and Gynaecology, Thanjavur Medical College, Thanjavur, during the year 2018-2021 under the guidance and supervision of **Prof.Dr.R.RAJARAJESWARI, MD.,DGO.,DNB.** This dissertation is submitted to **The Tamil Nadu Dr. M.G.R. Medical University, Chennai** in partial fulfillment of the University regulations for the award of the degree of **M.D. BRANCH II (Obstetrics and Gynaecology).**

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ACKNOWLEDGEMENT

I gratefully acknowledge and sincerely thank **Prof.Dr.S.MARUTHU THURAI MS.,MCH.,(vascular)**, The Dean, Thanjavur Medical College and hospital, Thanjavur for permitting me to conduct the study and use facilities of the institution for my Study.

I wish to express my respect and sincere gratitude to my beloved teacher and Head of the Department, **Prof.DR.R.RAJARAJESWARI, MD.,DGO.,DNB.,** Department of obstetrics and Gynaecology, Thanjavur Medical College, Thanjavur for her valuable guidance and encouragement during the study and also throughout my course period.

I Sincerely thank our **Associate Professors Dr.S.UDAYA ARUNA MD.,DGO and Dr.J.PRABHA.MD.,OG** for their constant support and guidance throughout the study.

I am bound my ties of gratitude to **Assistant Professor Dr.E.PRIYANKADEVI.MS.,OG,** for her valuable guidance in conducting this study.

I wish to express my sincere thanks to all the Assistant Professors of Obstetrics and Gynaecology Department for their support during the study.

I thank the Secretary and the Chairman of Institution Ethical Committee, Thanjavur Medical College, Thanjavur.

I also thank our Academic officer incharge **Assistant Professor DR.MAHESHWARAN MD**, Department of Pharmacology who helped a lot in doing statistics of my study.

I would be failing in my duty, if I don't place my sincere thanks to those patients who were the subjects of my study. Above all I thank God Almighty for immense blessings.

CONTENTS

INTRODUCTION

Maternal age is an important factor for good fertility outcome. Pregnant women of extremes of age group at both ends (less than 20 years and more than 35 years) comprise high risk groups .

The term "**adolescent**" is often used synonymously with "**teenager**". The World Health Organisation (WHO 2014) defines adolescence as the period of life between the age of 10 and 20, during which individual reproductive maturity is acquired, psychological development goes through a transition from childhood to adulthood, and where her socio economic independence is established. Adolescence is the age between 10 and 19 years (Shaw's textbook of gynaecology) [99]. Thus a teenage is a critical period, the period of "stress and storm". Hence pregnancy during this period places additional stress upon her. So, teenage pregnancy is considered as high risk.

Early marriage is a long established custom in India. According to the census data, prior to 1951, the average age at marriage for girls in India was 13 years. There is however a gradual rise in this. The Child Marriage Restraint Act (1978) revised the legal age of marriage from 15 to 18 years for girls. Studies indicate that in many States the mean age at marriage has already moved up to 19.5 years (1998).

The age at which a girl marries and enters into sexual life has a great impact on her fertility. Girls who marry before 18 years of age give birth to more number of children than those who married late. About 65% of teenagers aged 17-19 years, in India are either mothers or are pregnant [11]. It is estimated that if the age of

marriage is postponed from the age of 16 to 20-21 years, the number of births would decrease by 20-30% [1].

Factors contributing to the high teenage pregnancy rate in our country are early marriage, social custom, low literacy rate, lack of sex education and non-usage of contraceptive services. There is lack of information about the importance of avoiding pregnancy during the teenage.

A pregnant teenager may not be quite fit to bear the burden of pregnancy and labour at a tender age, as efficiently as a woman in her twenties thus placing herself in a high-risk group. Maternal and perinatal morbidity and mortality in teenagers is influenced by medical complications like pre-eclampsia, anaemia, preterm labour, operative delivery and adverse neonatal outcome.

On the other extreme, the elderly primigravida is a woman who goes into pregnancy for the first time at the age of 35 years or more [2, 3]. Pregnant women of 35 years or more are considered high risk due to increased maternal and perinatal morbidity and mortality. [3, 4]

Waters and Wagen first defined advanced maternal age, in 1950, and their suggested 35-year limit has been the de facto standard commonly used in research (Waters, E.G., & H.P. Wagen). Delayed childbearing in older women has become a recent trend in the well-developed countries. Reasons often vary and may include the desire by women to continue their education, invest more time in developing a professional career, or postpone marriage, as well as the increased availability of assisted reproductive technique).

According to the CDC(The Centers for Disease Control and Prevention), the average age of women at first birth has steadily increased over the last four decades, with the birth rate for women aged 40-44 more than doubling from 1990 to 2012 (Mathews T.J. & Hamilton B.E., 2014) [5]. Additionally, the rate of first births to women under the age of 30, specifically those younger than 20 years, has declined in the past decade.

Advanced maternal age beyond 35 years is considered to have more complicated pregnancy outcomes as compared to younger gravid. Many studies have documented the impact of complicated pregnancy in form of preterm delivery, low birth weight, perinatal mortality and morbidity, and increased prevalence of medical disorders like diabetes, hypertension, [6,7]etc. Delayed pregnancy leads to increased risk of complications in pregnancy along with labour which include miscarriages, pre-eclampsia, gestational diabetes mellitus, anemia, fetal growth restriction, antepartum hemorrhage, higher incidence of instrumental deliveries, cesarean section, post-partum hemorrhage and fetal risk factors such as malpresentation, multiple pregnancy, prematurity, increased NICU admissions due to increased perinatal morbidity and mortality [8,9,10].

In the present study my endeavor is to compare the complications of pregnancy, fetomaternal outcome of teenage primigravidas (less than 20 years) with primigravidas in the age group of 20 to 34 years and the elderly primigravidas (more than or equal to 35 years) with primigravidas in the age group of 20 to 34 years.

AIMS/OBJECTIVES

This study is designed to determine the incidence of various antenatal complications, pregnancy outcomes, mode of delivery and fetal outcome in primigravidas < 20 years of age and > 35 years of age group and to compare each group with those in the age group 20-34 years.

Study Centre: Department of Obstetrics and Gynaecology,
Government Raja Mirasudhar Hospital (RMH),
Thanjavur Medical College,
Thanjavur.

Duration of study: January 2019 to December 2019.

Time period: 12 months.

Study design: Prospective Observational Comparative study.

REVIEW OF LITERATURE

PREGNANCY IN TEENAGE

According to a report published by the International charity, **"Save the children"**, 13 million births (a tenth of all births worldwide) each year, are to women aged under 20, and more than 90% of these births are in developing countries. As per the National Centre for Health Statistics women aged 15-19years account for about 13% of all births.[12]

Overall, a third of women from developing countries have birth before the age of 20, ranging from 8% in East Asia to 55% West Africa.[13]

The youngest mother on record is **Lima Medina of Peru** who delivered by Caesarean section in May 1939. Her age at that time was 5 years and 8 months (Eastman).

The increasing adolescent population with consequent increase in the proportion of teenage pregnancy has drawn more attention to this problem in recent years. Currently one-third of the world's population is under the age of 15years and will soon enter the reproductive bracket, giving more potential for population growth.

Globally, researchers have gathered substantial evidence in favour of the fact that adolescent pregnancy is a high-risk pregnancy especially in a

primigravida. Poorly managed teenage pregnancies have higher antepartum and intrapartum complications apart from longstanding psychologic sequelae.

Complications from pregnancy and child birth were the leading cause of death for girls aged 15 to 19 years in poor countries (WHO). Pregnancy in adolescence is associated with maternal complications, preterm birth, low birth weight, perinatal mortality, increased infant mortality [14]. A woman in a developing country has a 1 in 65 risk of dying during pregnancy or child birth in the course of her lifetime, which is 33 times higher than that for women in developed countries.

To define this vast difference in sexual and reproductive health, the Population Action International (PAI) has got a **"Reproductive Risk Index"** with 10 key indicators out of which **annual births per 1000 women** aged 15-19 years is the prime one. This stresses the fact that teenage pregnancy is a socio-cultural problem with widespread consequences not only on the individual but also on the society and on the economy of the nation.

The teenage birth rate in India is 45/1000 women aged 15-19 years (2002). Various studies have reported different rates from 3.2% to 18.6%.

TABLE: 1

AUTHOR	**INCIDENCE (%)**
Bhalerao [15]	6.3
Pal A et al.[18]	3.2
Madhu C.K. et al.[17]	11.6
Arun Nayak et al.[16]	6.28

ADOLESCENCE AND GROWTH

It is during this period that the completion of physical growth and sexual maturation occurs. A teenager gains about 25 0percent of the adult height and 50 percent of the adult weight during puberty. The growth spurt in females occurs between 9.5-14.5 years. The peak weight velocity occurred approximately six months after the peak height velocity. Tanner A E et al [19] in their study found a difference in the height and weight of younger teenager and older primigravidas. They also observed that although they had not achieved full height and weight their outcome of pregnancy was not different from older primigravidas. Scholl TO et al [20] found that the length of gestation was associated with maternal stature and pre pregnant weight.

Steven S & Simon C [21] observed that the young pregnant adolescents have the potential to grow during and after pregnancy but they do not support the hypothesis that this growth is an obstetrical risk factor. Thame M and co-workers found that babies of teenage mothers had low birth weights and smaller head circumference than the control groups. They suggested that teenage girls are not physically mature and as a consequence had babies with low birth-weights and smaller head circumferences.

NUTRITIONAL NEEDS OF TEENAGERS

Teenagers usually are still growing and developing and thus their nutritional needs are conspicuously increased. So, pregnancy during this period places increased nutritional stress upon her.

Nutrition prior to conception and during pregnancy is an important determinant. Those with good nutrition can carry the pregnancy to term and have a normal outcome (Sukanich et al) [22]. Maternal nutrition has been implicated as a causative factor in pre-eclampsia, preterm labour and abruptio placenta. (Chaudhury & Kaminetzky et al) [11, 23]. The recommended daily dietary allowances of various minerals for pregnant women are as follows

VITAMINS AND MINERALS	**RDA**
Vitamin A	770 µg
Vitamin D	15 µg
Vitamin E	15 mg
Vitamin K	90 µg
Vitamin C	85 mg
Thiamine	1.4 mg
Riboflavin	1.4 mg
Niacin	18 mg
Vitamin B6	1.9 mg
Folate	600 µg
Vitamin B12	2.6 µg

Calcium	1000 mg
Sodium	1.5g
Potassium	4.7g
Iron	27 mg
Zinc	11mg
Iodine	220 µg
Protein	71g
Carbohydrate	175g
Fiber	28g

The nutritional needs of pregnant adolescents are the greatest at a time when it is most difficult to meet them. The present day adolescents, because of peer influence and changing life styles, diet and skip meals to maintain their body image. Because of this, they usually enter pregnancy with reduced nutrient stores and increased risk of nutritional deficiencies.

So, all pregnant teenagers should have special dietary counseling. Also the weight gain pattern should be monitored to ensure that energy intakes are sufficient to support a gain of about 0.4 kg (12 lb) per week in the 2^{nd} and 3^{rd} trimester. An additional 400 kcal/day should be advised to the pregnant teenagers along with extra calcium and phosphorus than their older counterparts [98].

COMPLICATIONS OF TEENAGE PREGNANCY

Pregnancy in adolescents is considered a high-risk event, because teenage girls are physically and psychologically immature for reproduction.

Health-wise, teenage mothers have a much higher risk for anaemia, pregnancy-induced hypertension, lower genital tract infections, premature labour and delivery etc., in addition to the social effects. Duru Shah [25], Pachauri and Jamshedji [26] found significant number of spontaneous abortions and still births. Khwaja et al [24] found anaemia to be twice common in their study group.

The commonly reported pregnancy complications include inadequate prenatal care, pregnancy-induced-hypertension, preterm labour and low birth weight babies. Pregnant teenagers need more attention for the prevention and treatment of pre-eclampsia, eclampsia, anaemia, prematurity and low-birth weight.

Teenage pregnancy increases the risk for preterm delivery, low birth weight and neonatal mortality that is independent of important known confounding factors. Infants born to teenage mothers aged 17 or younger had a higher risk (Chen XK et al) [27].

PRENATAL CARE

Researches indicate that pregnant teens are less likely to receive prenatal care, often seeking it in the third trimester if at all (Makinson. C) [28]. The reasons suggested for this include failure to recognize pregnancy, ignorance as to the need of care, casual attitude towards need of care, non-compliance and inappropriate methods of service and delivery.

The Guttmacher Institute reports that one-third of pregnant teens receive insufficient prenatal care and that their children are more likely to suffer from health issues in childhood or be hospitalized than those born to older women.

Pregnant teenagers registered late in a community-based study, with only 40 % early registration (Sharma AK et al) [29]. In 1997, 7.2 % of mothers aged 15-19 years received late prenatal care compared to 3.9 % for all ages.

Teenage mothers were less likely to make the first prenatal visit in their first trimester (16%) and to have adequate prenatal care. They had higher rates of anaemia, preterm deliveries and lower mean birth weights compared to adult mothers. (Thato S et al [30], Ndiaye O et al [31] in their study in France supported this view).

ABORTION PROBLEM IN TEENAGERS

A significant number of teenage pregnancy ends in abortions either spontaneous or induced. In all parts of the world, particularly in urban areas, an increasing number of all those having abortion are unmarried adolescents.

Worldwide, an estimated 46 million pregnancies are terminated each year out of which 36 million take place in the developing world. Twenty million of these abortions are carried out under illegal and often unsafe conditions (PAI, 2001). One woman dies every 7 minutes from illegal abortions in the developing countries.

The unmarried teenagers usually report late for termination (around 10 weeks) and if they go to untrained doctors, the consequences can be disastrous. 30% of all Indian induced abortions are performed on women who are under 20.

Russel (1974) reported his experience with induced abortion in 50 adolescents. He found more risk of trauma in his series and a high proportion of spontaneous abortion and premature delivery in subsequent pregnancies

The abortion rate for India is 47 per 1000 women aged 15 to 49 years.

HYPERTENSIVE DISORDERS IN TEENAGE

Extremes of age is a risk factor for pre eclampsia. Pre-eclampsia is greatest in women younger than 20 years of age. White African – American women younger than 15-17 years of age were found to have 2.6 times and 2.4 times risk respectively to develop pre-eclampsia compared to their 25-34 year old counterparts (Ian Donald) [32].

Nag in his study found that the complications of pregnancy like pre-eclampsia, eclampsia and abruption to be definitely higher in teenagers than their older counterparts of 21-24 years. Bhattacharya and Chaudhury [33] in their study of teenagers had found toxemia on the higher side 9.8 % compared to 1.6 % in the controls.

Goonewardene I M [34] reported that the younger teenagers had a significantly higher risk of gestational hypertension and pre-eclampsia. Malamitsi et al [35] also support this fact.

The increased incidence of pregnancy–induced hypertension among pregnant adolescents is largely explained by nulliparity (Treffers PE) [36].

Chahande MS et al [37] from their case-comparison study on 462 teenage mothers reported pre-eclampsia in 20.56 % of their subjects compared with 12.6 % in the older age group. Eclampsia was also significantly high (2.8 % versus 0.6 %) in the study group. On the contrary, Ziadeh S [38] reported that the incidence of pregnancy complications like anaemia, pregnancy-induced hypertension were similar in study and control groups.The incidence of pre-eclampsia and eclampsia by other authors is as follows:

TABLE: 2

Author	**Incidence (%)**
Porozhanova [39]	32.0
Dia AT [41]	17.5
Arun Nayak [16]	8.48
Asha Swarup [40]	11.0

ANAEMIA

Many studies have reported higher proportion of anaemia in pregnant teenagers than in their older counterparts. This is because of increased demand for the continuing growth and is related to the socio-economic conditions.

Geist RR [42] found anaemia (41%) to be the only antenatal complication that was significantly increased in his study on teenage pregnancy.

Teenages are more likely to be anaemic and so they are at increased risk of growth restricted infants, pre term labor and high infant mortality rate (Fraser and associates)[43]

Anaemia during adolescence worsens during an ensuing pregnancy. This is reflected in the higher incidence of anaemia by various authors like Anandalakshmi PN et al [44], Soula O [45], Goonewardane I M [34], Iloki LH [46] in their studies on teenage pregnancy. Incidence of anaemia in various other studies is as follows:

TABLE: 3

AUTHOR	**ANAEMIA (%)**
Porozhanova [39]	13.6
Dia AT [41]	25
Arun Nayak [16]	15.62
Asha Swaroop [40]	20
Elias Kovoor[47]	23

TEENAGERS AND PELVIC FACTOR

There are contradictory views about the frequency of contracted pelvis in adolescents and this absence of unanimity may be due to lack of uniformity in methods and dissimilarity in the age of patients studied.

The pelvic bones of female adolescents continue to grow for several years after growth in height has been completed. If pelvic growth is not completed before child birth, there is an increased chance of obstructed labour and vesico-vaginal

fistula (WHO, 1999). The younger patients experiencing shorter growth periods before conception therefore would exhibit a greater proportion of contracted pelvis (Bellard & Gold [48]).

Treffers [36] and Sukanich AC [22] concluded that "biologic immaturity" does not affect appreciably the reproductive performance of teenagers in terms of length of labour and route of delivery. In fact, the likelihood of operative delivery is not increased.

MODE OF LABOUR AND DELIVERY

Many studies have shown an increased number of vaginal deliveries (both spontaneous and instrumental) compared to the control group. The probable reason could be the smaller size of babies born to such mothers as hypothesized by many authors like Verma and Das KB[49], Dia AT[41], van Eyk N et al[50] and Ziadeh S [38].

Operative deliveries were found with increased frequency by Israel and Wountersz[51], 54.1% as against 44.4% in control. Mesleh RA[52] in his one year study of 2522 teenage pregnancies reported the rate of instrumental and caesarean section as 9% and 6% in study group compared to 5% and 10% in control group, respectively.

Overall the incidence of instrumental deliveries has come down even for the general population.

Anzar and Bennet [53] reported an increase in primary caesarean section rate by 28 % in patients 15 years or under. Dwyer et al have reported a low caesarean rate of 2.6 % overall. They concluded that female pelvis is not contracted because it

is fully grown before a girl is physiologically old enough to reproduce. Pereira et al [54] in their Mexican study on 296 cases reported a rate of 44.1% for caesarean section, 35.6 % for normal vaginal delivery and 20.3 % for instrumental labour.

Sheetal Dholakia et al [56] who did a comparative study of teenage pregnancy a decade apart reported a rise in the incidence of caesarean section from 4.07 % in 1987 to 13.17 % in 1997.

The main indications for caesarean section were cephalo-pelvic disproportion, abnormal presentation or fetal distress. Bhalerao AR[57], MS Chahande[56] agreed with these findings.

Unfier V & Plazze Garnica JA [58] have reported an increased incidence of caesarean section, spontaneous abortion, FGR and fetal distress and hypothesized that the relative state of hypo-arterialization characteristic of adolescent uterus may be involved in the pathology of these.

Mode of labour in various studies:

TABLE: 4

AUTHOR	VAGINAL DELIVERIES %	INSTRUMENTAL DELIVERIES %	CAESAREAN SECTION %
Van Eyk N [50]	-	19.7	6.2
A.K.Sharma et al [29]	95.3	-	4.9
Elias kovoor [47]	78	11	11
M.S. Chahande [37]	-	-	27.3
Geist R.R [42]	72.7	17.4	9

PERINATAL CONSIDERATIONS

Most studies from developed and developing countries have consistently reported that teenage pregnancy is at increased risk for preterm delivery and low birth weight.

Rogers [59] and Yoder et al [60] found that young maternal age was an independent risk factor for adverse birth outcomes. The increased risk probably was due to other factors like low socio-economic status, unwed pregnancy and inadequate prenatal care. Satin et al [61] concluded that teenage pregnancies aged between 16 and 19 years had no risk for intrinsic maternal youth and the obstetric risk is increased only in teenagers less than 16 years of age. But Fraser et al [43] suggested that young age conferred an increased risk of adverse pregnancy

outcome, which was intrinsic to maternal youth. First teenage births are not independently associated with an increased risk of adverse pregnancy outcome and are at low risk of delivery by caesarean section. However second teenage birth are associated with an almost three-fold risk of preterm deliveries and stillbirths (Smith GC et al) [12].

TABLE: 5

AUTHOR	PREMATURITY (%)	LOWBIRTH WEIGHT (%)
Van Eyk .N[50]	13.5	13.4
Ndiaye O [31]	-	23
Arun Nayak[16]	12.5	-
Madhu. C.K [17]	-	54
Asha Swaroop[40]	32	-

TEENAGE AND CONGENITAL ANOMALIES

Xi-Kuan Chen et al conducted a study on teenage pregnancy and congenital anomalies and results of the study was that compared with adult pregnancy (20–34 years old), and after adjustment for confounding variables, teenage pregnancy (13–19 years old) was associated with increased risk of central nervous system anomalies [odds ratio (OR) 1.08; 95% confidence interval (CI): 1.01, 1.16], gastrointestinal anomalies (OR: 1.39; 95% CI: 1.31, 1.49) and musculoskeletal/ integumental anomalies (OR: 1.06; 95% CI: 1.03, 1.10). The teenage pregnancy associated increase in risk for central nervous system anomalies

was mainly attributable to anomalies other than anencephalus, spina bifida/meningocele and hydrocephalus and microcephalus; for gastrointestinal anomalies the risk was mainly attributable to omphalocele/gastroschisis; and for musculoskeletal/integumental anomalies the risk was mainly attributable to cleft lip/palate and polydactyly/syndactyly/adactyly.

PERINATAL MORTALITY

Perinatal mortality is highest for babies of mothers under 20 years (RCOG). It was related to prematurity, pre-eclampsia, illegitimacy and young age of mother. The higher perinatal mortality in the infants of young teenagers is due in part to the higher percentage of low birth weight (Straton JA.)[63].

Sudarsan Saha et al [62] in a clinical audit of perinatal mortality have commented that perinatal mortality in teenage pregnancy and above 30 years is alarming. The audit suggests marital and child-bearing age should be within 20-30 years and compulsory antenatal care to reproductive mothers. It was estimated that less than three antenatal visits was associated with 91.34% perinatal loss and it was only 8.66% with more than three visits.

Pratinidhi et al [64] in their study on 598 teenage deliveries reported a perinatal mortality rate of 67.2 per 1000 births. The perinatal mortality rate of India is 44.0 per 1000 live births in 1999.

Chen XK et al [27] in their large population based retrospective cohort study have concluded that teenage pregnancy increases the risk of adverse birth outcomes that is independent of important known confounding factors like low socio-

economic status, inadequate prenatal care and inadequate weight gain during pregnancy.

Ballerao AR[57] reported a perinatal mortality rate of 65.2 per 1000 live births.

PREGNANCY IN ELDERLY

Extremes of maternal age adversely affect pregnancy outcomes. Advanced maternal age has only more recently become a leading topic for researchers.

In the last three decades, there has been a trend towards postponement of marriage and deferred child bearing, especially among healthy, well educated women with career opportunities.

How the maternal age affects the transition to motherhood is the context of a very interesting study by Wilhes-Nystrom et-al [65].

This study involved two groups

Group1 - primigravida of 20 – 29 years.

Group2 - primigravida of 30 – 39 years.

Group2 is better suited and able to undergo transition to motherhood and adapt themselves to their newer role better than their younger counterparts. However, a woman's fertility is at it's maximum at about the age of 23 after which there is a gradual decline. By the age of 40, the chances of conception are greatly reduced. Having once conceived, the elderly primigravida has a greater predisposition to abort.

There are two categories of pregnant population beyond 30 years. Those who had late marriage and spontaneous conception comprises one group, the other group

who were married in their early twenties and were unable to conceive, long period of infertility.

Whatever may be their background, pregnancy beyond 35 years is considered to be at risk in Indian scenario. We don't exactly know the upper age limit for conception, be it menopause or further beyond since we do have ART conceptions beyond menopause. Though comprehensive studies are lacking in very old, a series of few studies from 1932 – 1974 (USA) showed the possibility of pregnancy beyond 48 years and 6 pregnancies at 50 years of age. Stanteen(1956), Highdon(1960), Posner(1961), Bird and Meelin(1971), Horger & Smythe (1977). Ventura has noted a significant change in women of younger age group

giving birth in the 1960's and 1970's. In 1970, 80% of women less than 30 had given birth whereas in 1979, the number has decreased to 72%.

INCIDENCE AND EPIDEMIOLOGY

The global total fertility rate fell from 5 children per woman – life time in 1950 – 55 to 2.5 children in 2000 to 2005. Within the US, as well as in other industrialized countries, the crude birth rate has dropped with women having fewer children. In the US, the crude birthrate dropped from 24.1 in 1950 to 14.9 in 2002. Similarly, the overall fertility rate has dropped from 106.2 /1000 to 64.8 /1000. The implication that women are having fewer children than they were 50 years ago seems obvious. One would expect that the effect would be that fewer older women are having children. However, although overall birthrates for

Older women have decreased there is evidence that women are merely delaying childbearing.

At the age of 40 – 44 years, the number of women who had not had at least one birth was 15.8/1000 in 2002, compared with 15.1/1000 in 1960. However, at every other age group, the number of women who had not yet had a live birth was significantly higher in 2002 than in 1960. For example, 66.5% of women aged 20 – 24 years had not had a child yet in 2002 versus 47.5% in 1960. Similarly at age 25 – 29 years, 41.3% in 2002 versus 20% in 1960,

suggesting that women simply were having children later rather than opting not to have children at all.

The reasons for this shift towards later childbearing are multiple. Women are attaining higher educational levels than in previous decades. Within non industrialized countries, the age of first birth and the interval between births increases as women's status increases. Factors in particular that are related to this phenomenon are related to the women's education and the

wealth of the family. Within the US in 2002, 25.9% of women with live births had more than 16 years of education, compared with 8.6% in 1970. Level of education correlates with knowledge of contraception, age at first birth and total number of children.

The changing role of women in the work place, with more career opportunities available, has undoubtedly affected childbearing. Control of fertility with increased contraceptive options plays a part. Likewise, the availability of assisted reproductive technologies to older women has allowed many to achieve pregnancy and childbearing. In 2002 42.5% of cycles in

women aged less than 35 years resulted in pregnancies, while only 17.3% of cycles in women aged 41 to 42 years resulted in pregnancies. Live birth rates are lower, with only 10.7% of cycles in women aged 41 to 42 years resulting in live births.

A retrospective study of all deliveries to women over age 50 years, from 1977 to 1999 in the US identified 539 deliveries, for a rate of 4/100000. These women are likely to conceive with assisted reproductive technologies. The oldest woman to conceive a pregnancy naturally was 57 years old. Births to women as old as 66 years have been reported using assisted reproductive technology.

The mean age at marriage shows an increasing trend from decade to decade. This increase is found to be statistically significant. The marital age specific fertility rate is slightly higher for the age group 15 to 19 years but is lower for the ages of 35 and above. The relationship of cumulative number of pregnancies and the number of pregnancy wastages experienced shows that the pregnancies of mother increase with more pregnancy wastages. But, the average number for those who never experienced a loss was also high. (Afzal M et al)[66].

In a retrospective study of all deliveries in the US from 1977 to 1999, four maternal age groups were constructed to assess the risk gradients for fetal morbidity and mortality.

20 – 29 years - young

30 – 39 years - mature

40 – 49 years - Very mature

More than 50 years – older

The consensus was that for older mothers, risk of preterm, very preterm were tripled and very low birth weight (VLBW), small for gestational age (SGA) and

fetal morbidity was doubled when compared with younger counterparts. (Salihu HM et al)[67]. Advanced maternal age is a risk indicator for several pregnancy complications. This includes abnormal weight gain, obesity, gestational diabetes, chronic and pregnancy induced hypertension, antepartum hemorrhage, placenta praevia, multiple gestation, PROM and preterm labor.

Intrapartum complications of malpresentation, fetopelvic disproportion, abnormal labor, increased use of oxytocin in labor, caesarean section, instrumental delivery, sphincter rupture and postpartum heamorrhage are more frequent in older women.

There is also a high risk of still birth throughout gestation and the peak risk period is 37 to 41 weeks. (Montan.S)[68]. Increasing age is a continuum rather than threshold effect. In the early 1990's, Berkowitz et al[69]reported that although pregnancy complications are more common in primiparous women aged 35 years or older, the risk of poor neonatal outcome is not appreciably increased.

PRECONCEPTIONAL ISSUES

FECUNDITY

Reproductive impairment, what is referred to as fecundity has not been well explored as fertility. Fecundity impairment also increased with advancing age. It is 11.7% for women of 20 to 24 years age group whereas 33.6% for those aged 35 to 39 years.

Impaired fecundity was complained of more by women in their 30's (11.3%) as against those in their 20's (7.8%). On the problem of lowered fecundity as a function of age, Schwartz and Mayan reported as cumulative pregnancy success after artificial insemination for different age groups as

26 – 30 years - 74.1%

31 – 35 years - 61.5%

More than 35 years – 53.6%

All these clearly prove that there is a definite decline in the woman's ability to conceive with increasing age.

FERTILITY:

Fertility declines with advancing maternal age. In 2002 fertility rates for women aged 35 to 39 years were 41.4 /1000, 8.3/1000 for women aged 40 to 44 years and 0.5/1000 for women 45 to 54 years as compared to 103.6/1000 for women aged 20 to 24 years and 113.6/1000 for women aged 25 to 29 years.

There are multiple factors, both physiological and acquired that contribute to this diminished fertility with increasing age. Acquired pathology contributing to infertility, particularly tubal disease, accumulates over time. The structural lesions that increase with advancing age, such as uterine fibroids, endometrial polyps and endometriosis may also play a role in decreased fertility. Ovarian oocyte reserve declines with increasing number of ovulatory cycles.

Considering how common the problem is, it is surprising that the literature is not more replete with information on the subject and it certainly deserves a review. There is no doubt that the elderly primigravida is somewhat more likely to encounter complications which are the result of the natural process of growing older. But, even more important is the fact that her dwindling chances of future pregnancies put more of a premium on the present one. Furthermore, her endurance and her resistance to disease are not those of a woman in her early 20's and she is

therefore likely to require help earlier. A long history of antecedent infertility serves only to magnify this point. Not withstanding all this, the majority of these patients, properly supervised, are capable of safe and successful pregnancy.

EARLY PREGNANCY ISSUES:

The risk of aneuploidy rises significantly with advancing maternal age. Normal physiology predicts higher rates of aneuploidy with ageing. Oocytes reach metaphase1 during the fetal period and remain aligned on the metaphase plate until the oocyte is stimulated to divide, just prior to ovulation. Errors accumulated over time seem to increase the risk of non – disjunction, leading to unequal chromosome products at completion of division. Aneuploidy reduces implantation rates and result in abnormal development of implanted embryos.

A prospective cohort study of women with recurrent miscarriage in which pre-implantation genetic diagnosis (PGD) and In vitro fertilization (IVF) was performed showed an aneuploidy rate of 43.9% for patients younger than age 37 years and 67% in patients older than 37 years.

FIRST TRIMESTER COMPLICATIONS:

Older women are at increased risk. Data from the FASTER[70] (First and Second Trimester Evaluation of Risk) trial, in which approximately 30,000 women at 10 to 14 weeks of gestation were enrolled in a prospective multicenter investigation of singleton pregnancies, revealed increasing rates of both threatened abortion and miscarriage with advancing maternal age.

Although the rates found in this studies likely underestimate true incidence (as women with losses prior to 10 to 14 weeks were never enrolled), adjusted odds ratio for miscarriage were 2.0(95% CI 1.5 – 2.6) for women aged 35 to 39 years and 2.4 (95% CI 1.6 – 3.6) for women aged above 40 years when compared with women under age 35 years.

FIRST VERSUS SECOND TRIMESTER SCREENING FOR ANEUPLOIDY

The current American College of Obstetricians and Gynaecologists (ACOG) recommendation regarding screening for fetal aneuploidy is that women with singleton pregnancies who will be aged 35 years or older at delivery and with women with twin pregnancies aged 33 years or older at delivery should be offered prenatal diagnosis, and that all women should be offered screening. This recommendation is based on age – related risk of Down syndrome and represents a consensus opinion.

In the first trimester, chorionic villus sampling is recommended for diagnosis of aneuploidy. Amniocentesis is not recommended during the first trimester because of higher rates of pregnancy loss following the procedure compared with traditional (15-17 weeks) timing

LATE PREGNANCY ISSUES

As women age, they have a greater opportunity to acquire conditions that can influence their health and the health of the fetus. Because of this women aged 35 years or older can expect to have twice the rates of ante partum hospitalization than the younger counterparts. The two most common medical problems complicating pregnancy are hypertension (pre-existing and

pregnancy related) and diabetes(pre gestational and gestational).

HYPERTENSION

Older women have a two fold higher risk of being diagnosed with this problem. Increasing age by itself favours hypertensive disease and reduces the resilience of the cardiovascular system as a whole. The incidence of preeclampsia in the general obstetric population is 3-4%. This increases to 5-10% in women aged 40 years and is as high as 35% in women over age 50 years.

Tysoe studied 41978 cases and found a strong correlation between age, hypertension and toxemia in elderly pregnancy. Sivalingam[71] also found that PIH is the most common complication among 90 elderly primi out of 13,898 deliveries. Ramsevak did a comparative study and found that elderly gravidae have increased risk of antepartum complication like preeclampsia. H.P.Gupta presented a paper and his study period being 1 year from 1990 to 1991 at K.G.Medical college, Lucknow.(150 elderly vs 150 younger pregnancies). He showed a rise in the incidence of hypertensive disease in the elderly pregnancy (8.6% compared to 3.9%). Bhum reported no increase in hypertension and toxemia with advancing maternal age. Booth and Williams found that the incidence of

toxemia is more in the 20 to 24 year age group than in the older age group. The higher rate for 20 to 24 year age group could be due to the small number of deliveries in that age group which is less than 200.However except those two papers, all others show only an increasing incidence of hypertension and toxemia with advancing maternal age. Yasin and Beydoun[73] also found occurrence of hypertension in the range of 16% in the elderly age group when compared to 2% in the general population. Spellacy and associates [72] showed that women above 40 years had a three fold rise in PIH when compared to those between 20 to 30 years of age.

Lehmann and Chism[74] did a 3 year study at charity hospital and found an incidence of 13% when compared to 10% in the general population. Achana did a study of obstetric performance of elderly pregnancy and compared with that of younger primigravida. The inference was a 23.7% increase in the incidence of PET in the former versus 13.3% in the latter group.

Faunders .A, Fanjul et al studied for one year about the influence of age and parity on various parameters among 19,853 deliveries. According to their observation, the frequency of toxemia of pregnancy remained the same from 15 to 29 years. Above 29 years, it progressively increased. By age 40, it was twice the level found in women under 30 years. Highest levels were found in nullipara and multi above 7 or more births. Lowest levels were found in parities 1 to 2.

The incidence of hypertensive syndrome increased in relation to age in all parity groups, when age and parity were jointly analysed but the influence of parity was not similarly consistent. With careful monitoring and appropriately timed intervention, maternal and fetal morbidity and mortality can be reduced, but this is associated with an increase in preterm birth, small for gestational age infants and caesarean delivery.

ANAEMIA

Anaemia is highly prevalent among poor urban pregnant women. Various socioeconomic and dietary factors may influence the anaemia and vitamin A status of these women. The pregnant women who were either illiterates or received only informal education (upto grade 10) had significantly lower haemoglobin levels than those who completed atleast a secondary school certificate.Similarly women whose husbands were illiterate or received only informal education and those women from

families with percapita income below poverty line had significantly lower haemoglobin and serum vitamin A levels. These results were derived from a cross sectional study among pregnant women in a poor urban population of Bangladesh.

DIABETES MELLITUS

The prevalence of diabetes increases with age. The rates of both preexisting and gestational diabetes increase 3 to 6 fold in women 40 years of age or older compared to women aged 20-29 years. Diabetes during pregnancy could result in severe or fatal complications to mother or the unborn. They include polyhydramnios, preeclampsia, congenital anomalies, abortion, macrosomia, stillbirth, neonatal asphyxia and others stressing the importance of early detection and treatment of diabetes mellitus. GDM is the carbohydrate intolerance of variable severity first recognized during pregnancy.

The risk factors for gestational diabetes (obesity, older than 30 years, arterial hypertension, glucosuria, previous GDM, family history of diabetes, family history of macrosomia) identify only 50% of pregnancies with gestational diabetes. Hence, it is necessary to screen all pregnancies.

Prevalence of GDM in Hispanic women in USA is 12.3%. Diabetes prevalence in Mexico is 2-6%. A study was conducted with OGTT at Princess Margaret hospital, China with a group comprising of 187 and the age cut off being 30.5 years. In young women (age less than 30 years) with family history alone, the incidence of glucose intolerance was similar to that in the low risk pregnant population (12.5% and 6.3% for 8.0 mmol/l and 9.0 mmol/l cut off for 2 hours value of 75 gm OGTT respectively). In women aged above 30 years, the incidence of glucose intolerance raised by 3 fold (35.2% and 22.2% for 8 mmol/l and 9 mmol/l cut off

respectively). Dawn believe that there is more chance of unmasking of diabetes in pregnancy in later years. Geines et al showed that the frequency of diabetes did not increase among primi up to 38 years. Kirz et al [75]showed that rate of diabetes in primigravida of 35 years

or more as 4.1% compared to multiparous controls of younger age group where it is only 1.7% .

Hyperemesis Gravidarum is somewhat more common. Much of this can be accounted for by the patient's very natural anxiety.

PLACENTA PREVIA

Placenta previa increases dramatically with advancing maternal age. Women older than 40 years have a 9 fold greater risk than women under the age of 20 years, after adjusting for potential confounders, including parity. Gilbert et al[76] did find a 10 fold increased risk of placenta pravia in nulliparous women 40 years of age or older when compared to women aged 20-29 years, although the absolute risk of this was small (0.25% vs 0.03%).

PRETERM LABOR

Preterm labor is rather more likely. It can be spontaneous or iatrogenic. Studzinski.Z[77] observed that preterm delivery was more common in older mothers (19% versus 5%).The older mothers had an average of 5.1 antenatal visits. The rate of caesarean delivery was also more in older age group (40% versus 19%).

BREECH PRESENTATION

There was a clear tendency to increased incidence of breech births with age, with lowest frequency in the 15-19 year age group and almost 7 times the frequency among 35 and above. The incidence of breech births also increases with parity.

MULTIPLE PREGNANCY

The incidence of multiple pregnancy is more common with advancing age (2% at 35 years). A descriptive analysis from Germany concluded that among twins, the mortality is high in the neonatal period (RR5.16:CI;3.6 -7.5) and in twins born to mothers above the age of 35 years(RR 5.12; CI ; 3.5- 7.6). Fretts R C Usher et al [78] observed that women over 35 years of age had an increased risk of unexplained fetal death(OR 2.2 ,95%CI 1.3 -3.8) from a retrospective study on the causes of 715 stillbirths and 822 neonatal deaths in 101640 births between 1961 and 1995. The incidence of dizygotic twinning increases with maternal age. The most important cause of multiple pregnancy in older women currently is conception with assisted reproductive technologies (ART) and ovulation induction (OI).

According to the CDC (2002), 0.7% of all 3.9 million births in the US in 1998 were the result of these techniques. More than half of this percentage were multiple infant births, which account for much of the morbidity from preterm delivery and neurological sequale.(Schieve and colleagues)[7]. Finally, Hansen and co workers [80] reported that 8.6% of 301 infants conceived using ICSI and 9% of 837 infants conceived by IVF had major birth defects, compared with 4.2% in 4000 control women.

DYSFUNCTION OF LABOR

Women in the age group 35 years or older are more likely to be delivered by caesarean section. The caesarean delivery rate in the general obstetric population of the US is almost 30%, compared to almost 50% in women aged 40-45 years and almost 80% in women aged 50-63 years .The reasons for this are multifactorial. There appears to be a linear relationship between dysfunctional labor and maternal age. There is also increased risk of medical complications, induction of labor and malpositions seen in older gravid. The duration of labor tends to be increased by about 25% on average.

Much of this is due to the greater anxiety of the older woman facing labor for the first time. Some degree of inertia is common. Posterior positions of the occiput are very much more usual. The effects are troublesome and in about a third of cases, labor is prolonged. Inertia is also likely to complicate the case which has had labor induced. The response to induction tends to be unsatisfactory that one should have very good reasons for embarking upon it. It is said that labor may be adversely influenced by the impaired joint mobility which comes with increasing years. The significance of this is small compared with the functional activity of the uterus and the elasticity of the soft tissues of the birth canal. The perineum and lower vagina don't stretch well, so that episiotomy is often indicated.

According to study by Wang et al[81], with 76 multiparous women of 40 years and older and 152 multiparous controls between 25 to 30 years, incidence of intrapartum fetal distress and caesarean section rate were significantly higher among older multipara (6.6% versus 1.3%,1.3% ,$p<0.05$ and 5.3%vs 0.7% ,$p<0.05$ respectively). The inertia of first and second stages of labor is likely to obtrude into the third stage. Manual removal of placenta is required more frequently and the

coexistence of fibroids makes this operation more likely. Signs of maternal distress in labor, as might be expected appear more readily in the older women. Delivery more often has to be assisted surgically. Only 40% of cases more than 40 years had spontaneous deliveries and 38% required forceps. The caesarean section rate was also increased 4 fold. The situation has not changed in modern times and certainly forceps will be required about 2 to 3 times as often in younger women.

FETAL ISSUES

Maternal age below 20 years and above 30 years were significantly associated with the risks of low birth weight and preterm birth. No association was found between maternal age and apgar score. However, Studzinski[77] observed significant differences in apgar scores.

The older mothers had an average of 7.9 at 1 min versus 9.0 of younger and 8.5 at 5 min versus 9.3 in the younger ones.

PERINATAL MORBIDITY

Advanced maternal age is responsible for a substantial proportion of the recent increase in rate of low birth weight (LBW) and preterm (PTD) delivery. Cnattingus et al [82] in a large Swedish cohort study, found that nulliparous women aged 35 to 40 years with singleton gestations had a near 2 fold increased risk of preterm delivery. There is also a 1.7 fold increased risk of delivering a small for gestational age baby compared to women aged 20 to 24 years.

A US population based study also found a linear increase in the risk of delivering a LBW baby, with 2.3 fold increased risk for women above 40 years versus women aged 20 to 24 years(95% CI 1.6 -3.4) .

PERINATAL MORTALITY

Historically, a significant proportion of Perinatal deaths seen in older women were due to lethal congenital and chromosomal anomalies. In 28 industrialized countries, this is largely due to non-anomalous fetal deaths and perinatal losses with multiple gestations. There is also an increased risk of unexplained fetal death among older gravida, even after controlling risk factors such as diabetes, hypertension, antepartum bleeding and multiple gestation.

In a population based analysis of obstetrical outcome at the Royal Victoria hospital in Montreal, the older women were found to be at higher risk of fetal death compared to younger women (for women of 35-39 years as compared with women <30years, OR 1.9, 95% CI 1.3 -2.7 ; for those > 40 years ,OR 2.4 ,95%CI 1.3 -4.5) after controlling for potential confounders.

Jacobsson et al[83] in a large population based study from Sweden, reported higher rates of fetal and neonatal death in older mothers. The rates were 3.2 , 6.4, 11.6 per 1000 for women aged 20 -29, 40-44, and >45 years of age respectively.

MATERNAL MORTALITY

According to WHO, a maternal death is defined as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of duration and site of pregnancy, from any cause related to or aggravated by pregnancy, or it's management but not from accidental or incidental causes.

Maternal mortality is higher in women aged 35 years and older but improved medical care may ameliorate this risk. From 1974 to 1978, older women had a 5 fold increased relative risk of maternal death compared to that of younger women. By 1982, the mortality rates were reduced by 50%, probably due to improvements in health care (Buehler and colleagues)[84]

Through improved medical care and other facilities, there is a marked reduction in maternal mortality. Rochat[85] has shown that MMR is age related and a fourfold increase for women in their late 30's and 8 fold increase in their late 40's. In many countries, women do not have access to maternity hospitals or to skilled professionals for delivery. The WHO estimates that 46% of the 140.7 million deliveries that occur annually worldwide, take place in a health facility.

In Europe and US, nearly all of the roughly 2.5 million births take place in a health facility. Only 36% of the 30,730,000 annual deliveries in Africa occur in a health facility.

There are striking differences in the institutional deliveries between the large nations of SE Asia such as China with 51% and India, 26%. On the other end of the distribution are Pakistan(13%), Afghanistan(5%) and Bangladesh (5%) where maternal mortality is high.

While advancing maternal age is associated with increased risk of maternal mortality, in industrialized countries this is still a rare event. The obstetrically related causes of death in the US from 1991 to 1997, for women aged 26-29 years was 9/100,000 live births, the risk for women aged 35-39 years was 21/100,000 live births and 46/100,000 live births for women older than 40 years. The most common causes of death were related to hypertension, haemorrhage and thromboembolism. With 16% of world's population, India accounts for 20% of the world's maternal deaths. In Asia, only Bangladesh and Nepal have a higher mortality than India. Even within the country, Kerala and Tamilnadu have lower maternal mortality as compared states like Rajasthan and Uttar Pradesh.

Around 20% of maternal deaths in India are due to indirect causes. During the last three decades, significant changes took place in medicine. The birth of chemotherapy and antibiotics, availability of blood transfusion services, improvements in anaesthesia and surgical techniques were some of the significant breakthrough in medicine. The impact of such advances had been significant in all fields of medicine including obstetrics and this is reflected in the reduction in maternal mortality rate.

The outcome of various studies are listed below:

TABLE: 6

COMPLICATIONS	**Pariwal et al[87]**	**Okechukwu Bonaventure Anozie et al[86]**	**Rehman BU et al[88]**
ANAEMIA	11%	26%	-
HYPERTENSIVE DISORDERS	9%	16%	20%
HYPOTHYROID	4%	-	-
FETAL DISTRESS	3%	4%	4%
CESAREAN SECTION	62%	36%	60%
LOWBIRTH WEIGHT BABIES	58%	-	15%
NICU ADMISSION	-	-	27.5%
CEPHALO PELVIC DISPROPORTION	-	16%	-
POST PARTUM HEMORRHAGE	-	8%	5%

PRETERM BABIES	12%	16%	10%
PERINATAL MORTALITY	-	6%	2.5%

METHODOLOGY- PROPSECTIVE COMPARATIVE STUDY

This is a prospective comparative study conducted at Government Raja Mirasudhar hospital, Thanjavur in the Department of Obstetrics and Gynaecology from January 2019 – December 2019.

Data are collected from both the patients attending out patient and in patient department and then they are followed and the details regarding antenatal complications, intrapartum events and fetal outcome are collected from them.

The study consists of 250 primigravidas who are selected randomly.Total cases are divided into three groups

Group A consists of teenage primigravidas (<20 years) [n=100].

Group B consists of elderly primigravidas (≥ 35 years of age) [n=50].

GROUP C had primigravidas in the age group of 20 and 34 [n=100].

The incidence of antenatal complications, mode of delivery and perinatal outcome are compared between these three groups.

The results of the study and their statistical significance are compared between the study groups and control group using Chi Square test and P value < 0.05 has been taken as their level of statistical significance.

INCLUSION CRITERIA:

- Primigravidas who are present at the time of data collection and willing to participate in the study.
- Primigravidas admitted for abortions.
- Primigravidas admitted for molar pregnancies
- Primigravidas with overt diabetes mellitus , chronic hypertension, obesity.

EXCLUSION CRITERIA:

- Multigravidas in all age groups.

RESULTS AND ANALYSIS

The study conducted in Government Raja Mirasudhar Hospital consists of primigravidas attending the outpatient and in patient department during the period January 2019 to December 2019.

The total number of primigravidas delivered during the study period was **4874** .Among them **412 were teenage** primigravidas accounting to **8.45%** and **118 were elderly** primigravidas accounting to **2.42 %.**

Our study group A consists of 100 teenage primigravidas and group B consists of 50 elderly primigravidas and group C (control) consists of 100 young adult primigravidas.

The incidence of anaemia, hypertensive disorders of pregnancy, hypothyroidism, gestational diabetes mellitus, pre term labour, PROM, PPROM, cephalo pelvic disproportion, malpresentation, post partum hermorhhage, chronic hypertension, diabetes mellitus, obesity were compared between the study group A and control group C and the study group B and control group C.

The incidence of IUGR, still birth, low birth weight, preterm babies, NICU admission, Early neonatal mortality were also compared between the study group A and the control group C and between the study group B and the control group C.

The results were tabulated and represented in percentages and pictorial graphs for easy interpretation and Chi Square test was used to find statistical significance between the group

5.1 INCIDENCE OF ANAEMIA

TABLE: 7 ANAEMIA (moderate and severe anaemia)

ANAEMIA	GROUP A (n=100) TEENAGE PRIMI	GROUP B (n=50) ELDERLY PRIMI	GROUP C (n=100) CONTROL GROUP
NUMBER OF ANAEMIA	33	18	18
PERCENTAGE OF ANAEMIA	33%	36%	18%

FIGURE 1:

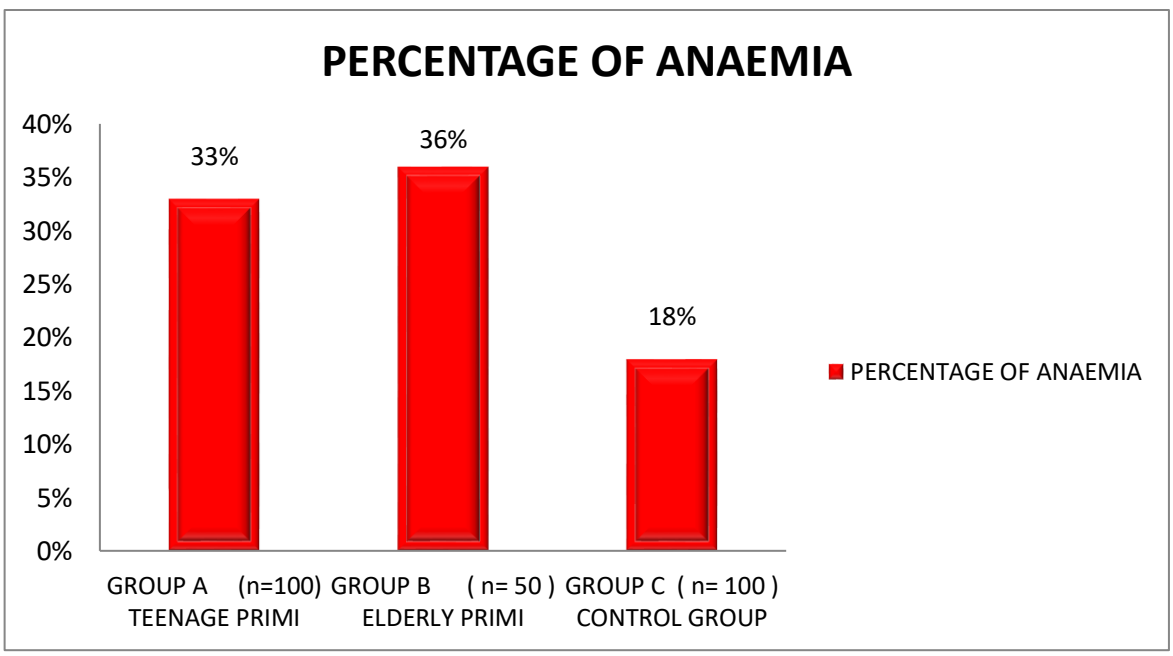


Table 7 shows the incidence of anaemia among the three groups.

Among the teenage primigravidas (study group A) 33 (33%) were anemic in comparison to the control group C which is 18%. P_1-value= 0.014; statistically significant.

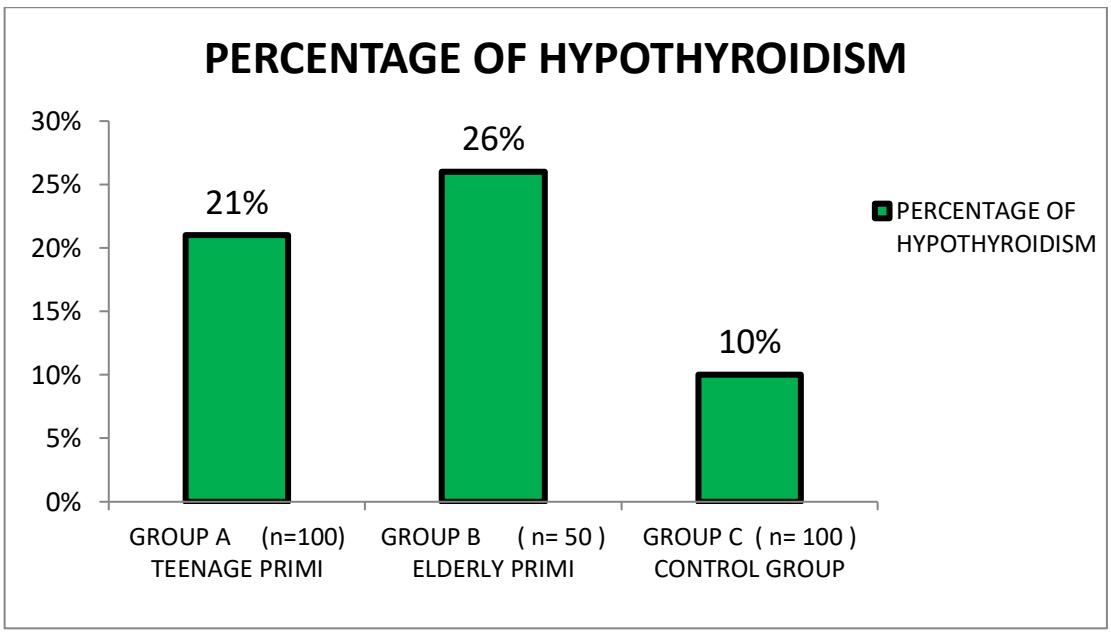
Among the elderly primigravidas (study group B) 36 % were anemic in comparison to the control group C whch is 18%. P_2- value= 0.014; significant compared to the control group.

5.2 INCIDENCE OF HYPOTHROIDISM

TABLE NO 8

HYPOTHYROIDISM	GROUP A (n=100) TEENAGE PRIMI	GROUP B (n=50) ELDERLY PRIMI	GROUP C (n=100) CONTROL GROUP
NUMBER OF HYPOTHYROIDISM	21	13	10
PERCENTAGE OF HYPOTHYROIDISM	21%	26%	10%

FIGURE 2



From the above **table 8** it is evident that the incidence of hypothyroidism is higher in elderly (26%) [p_2-value= 0.010] and teenage (21%) [p_1-value=0.030] primigravidas in comparison with the normal adolescent group.

The incidence of hypothyroidism in both teenage and elderly primigravidas is statistically significant than the young adult primigravidas.

5.3 INCIDENCE OF HYPERTENSIVE DISORDERS

TABLE 9

HYPERTENSIVE DISORDERS OF PREGNANCY	GROUP A (n=100) TEENAGE PRIMI	GROUP B (n=50) ELDERLY PRIMI	GROUP C (n=100) CONTROL GROUP
NUMBER OF GESTATIONAL HYPERTENSION	8	18	5
PERCENTAGE OF GESTATIONAL HYPERTENION	8%	36%	5%
NUMBER OF PRE ECLAMPSIA AND ECLAMPSIA	7	11	4
PERCENTAGE OF PRE ECLAMPSIA AND ECLAMPSIA	7%	22%	4%

FIGURE 3

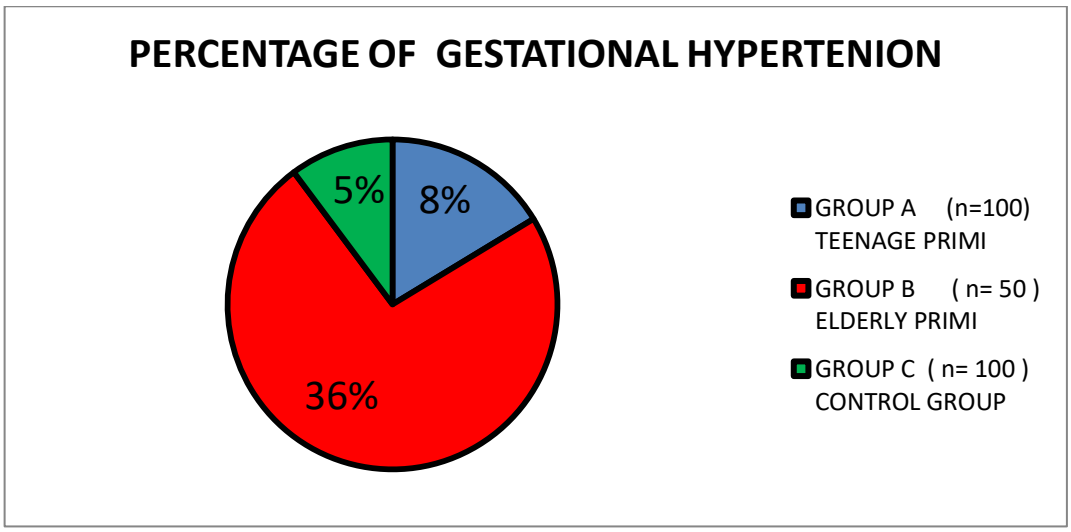
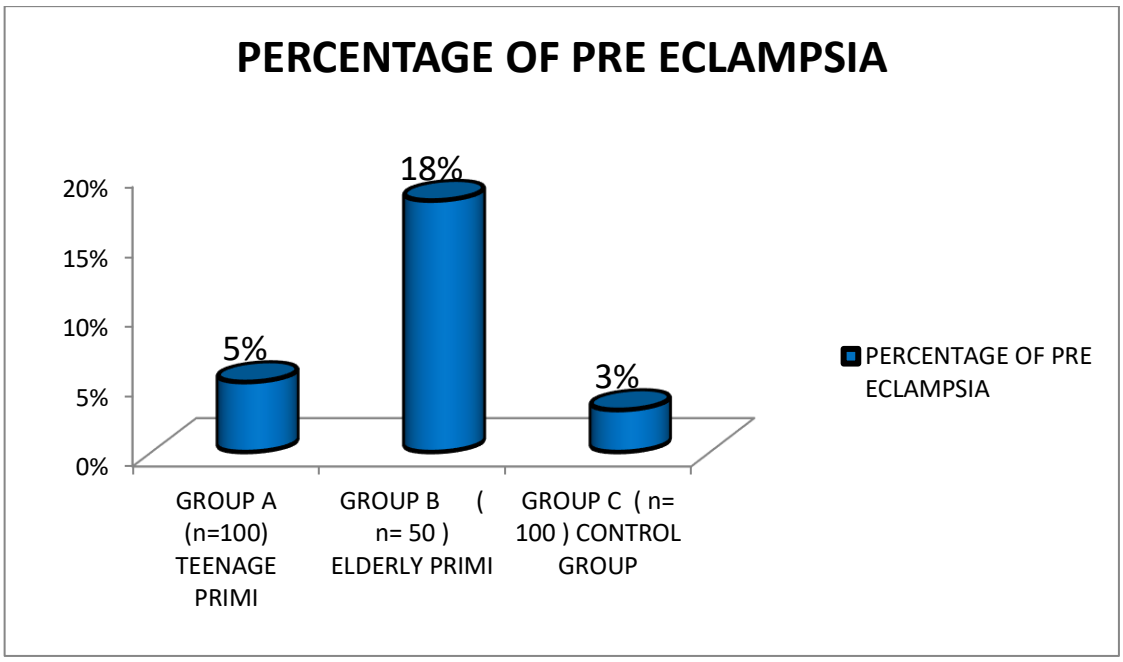


FIGURE 4



The incidence of gestational hypertension is higher in both teenage and elderly group in comparison with the control group.

p_1= 0.019 ;p_2< 0.001. Both are statistically significant

The incidence of preeclampsia and eclampsia is also higher in the study group A and study group B compared to the control group.

p_1= 0.865; statistically insignificant

p_2= 0.0005; statistically significant

5.4 INCIDENCE OF GESTATIONAL DIABETES MELLITUS

TABLE NO 10

GESTATIONAL DIABETES MELLITUS	GROUP A (n=100) TEENAGE PRIMI	GROUP B (n=50) ELDERLY PRIMI	GROUP C (n=100) CONTROL GROUP
NUMBER OF GDM	7	9	4
PERCENTAGE OF GDM	7%	18%	4%

FIGURE 5

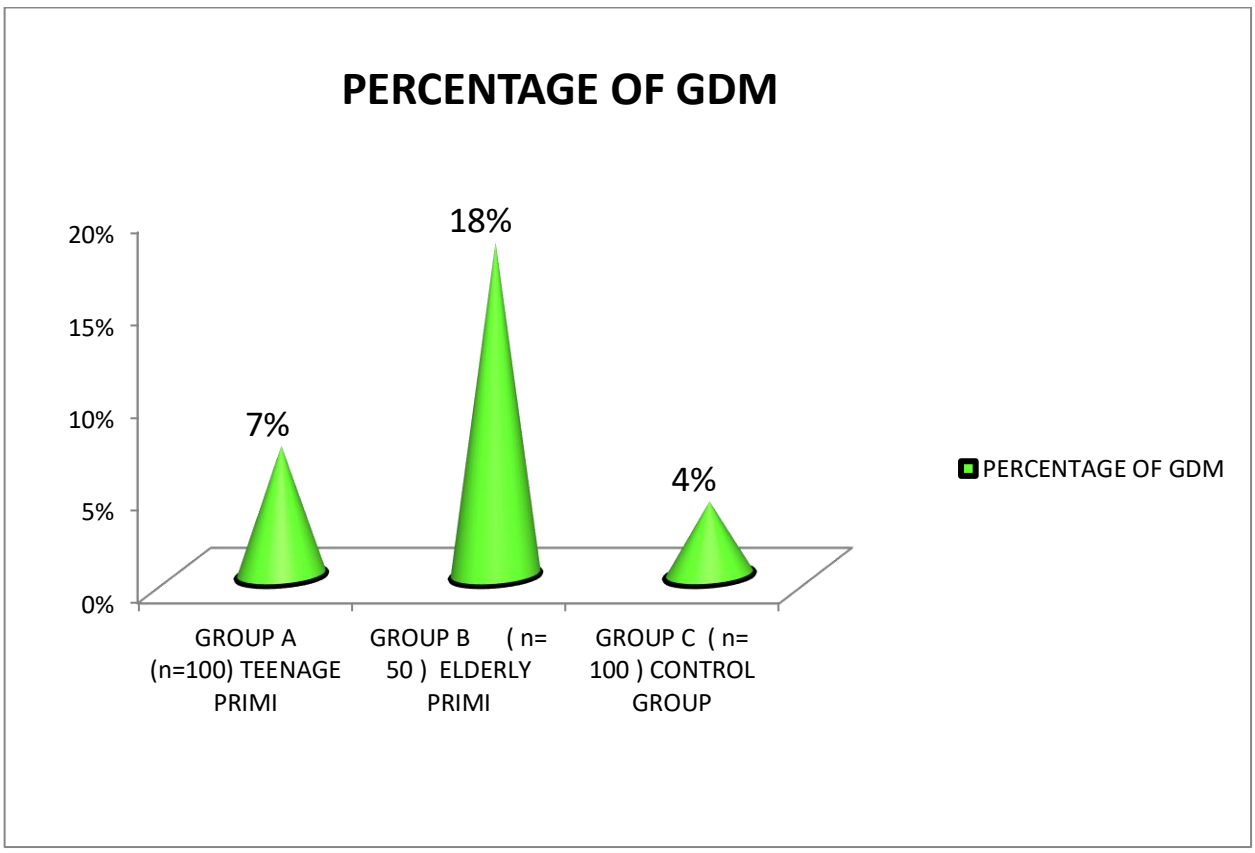


Table 10 summarizes the incidence of gestational diabetes mellitus . The incidence is higher among the elderly primigravidas (18%) which is highly significant [p_2-value=0.004] than normal young adult primigravidas (4%).

7% of the teenage primigravidas had gestational diabetes mellitus.

5.5 INCIDENCE OF PRE TERM LABOUR

TABLE NO 11

PRETERM LABOUR	GROUP A (n=100) TEENAGE PRIMI	GROUP B (n=50) ELDERLY PRIMI	GROUP C (n=100) CONTROL GROUP
NUMBER OF PRE TERM LABOUR	12	0	6
PERCENTAGE OF PRETERM LABOUR	12%	0%	6%

FIGURE 6

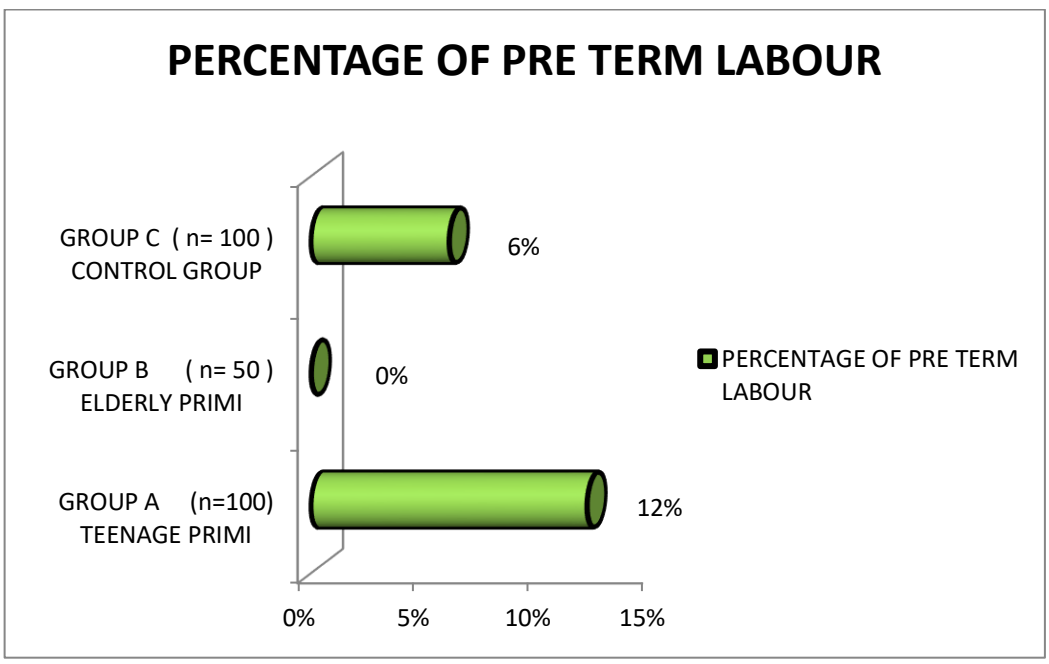


Table 12 shows the results of analysis of the percentage of preterm deliveries among the three groups.

12 % of the teenage primigravidas went into pre term labour (before 37 weeks) which is high but statistically insignicant [p_1-value=0.138]

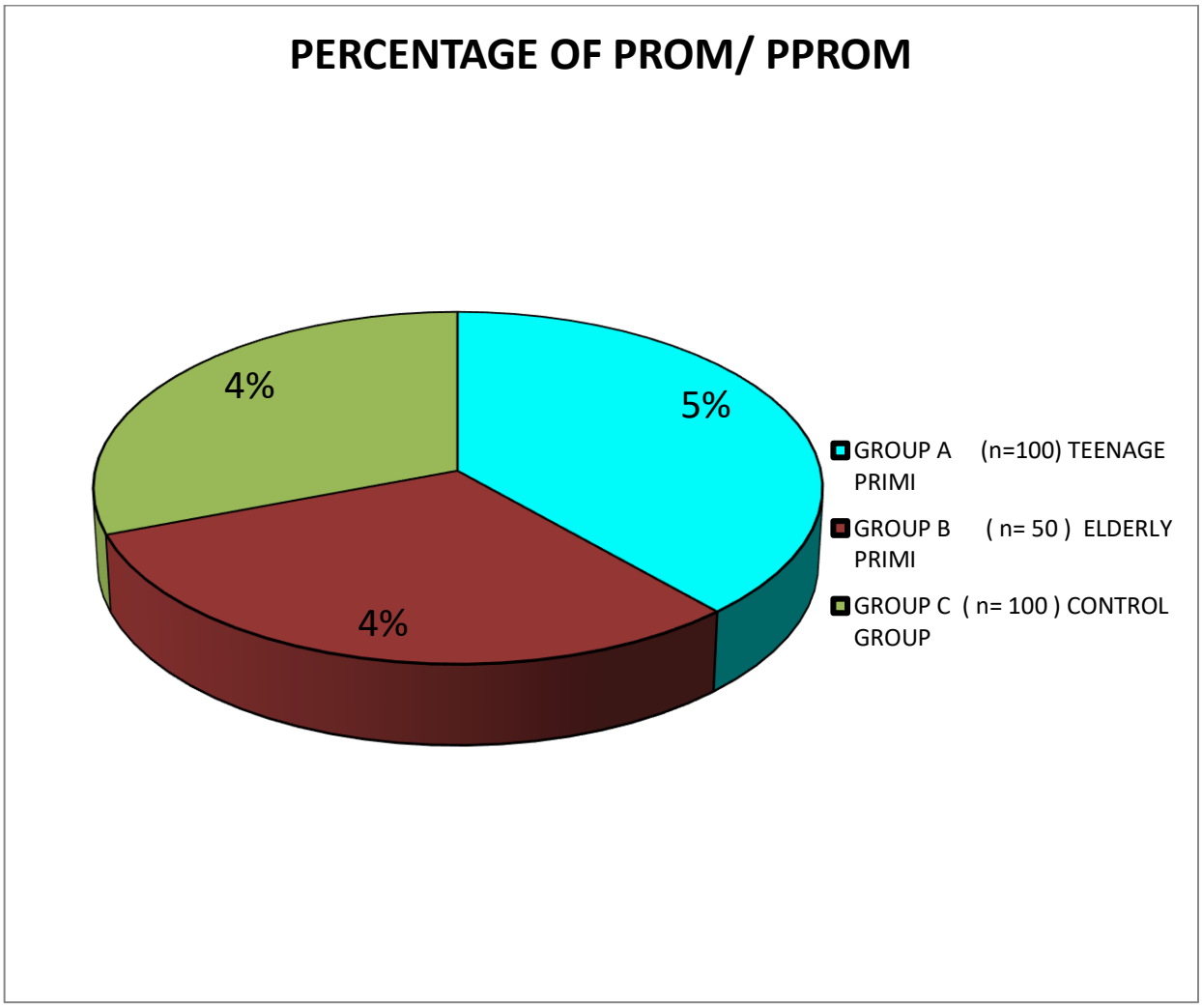
No elderly primigravidas went into preterm labour among the 50.

5.6 INCIDENCE OF PROM/ PPROM

TABLE NO 12

PROM/PPROM	GROUP A (n=100) TEENAGE PRIMI	GROUP B (n=50) ELDERLY PRIMI	GROUP C (n=100) CONTROL GROUP
NUMBER OF PROM/PPROM	5	2	4
PERCENTAGE OF PROM/ PPROM	5%	4%	4%

FIGURE 7



From the table 13 it is evident that the percentage of PROM/PPROM was almost same in all the three groups.

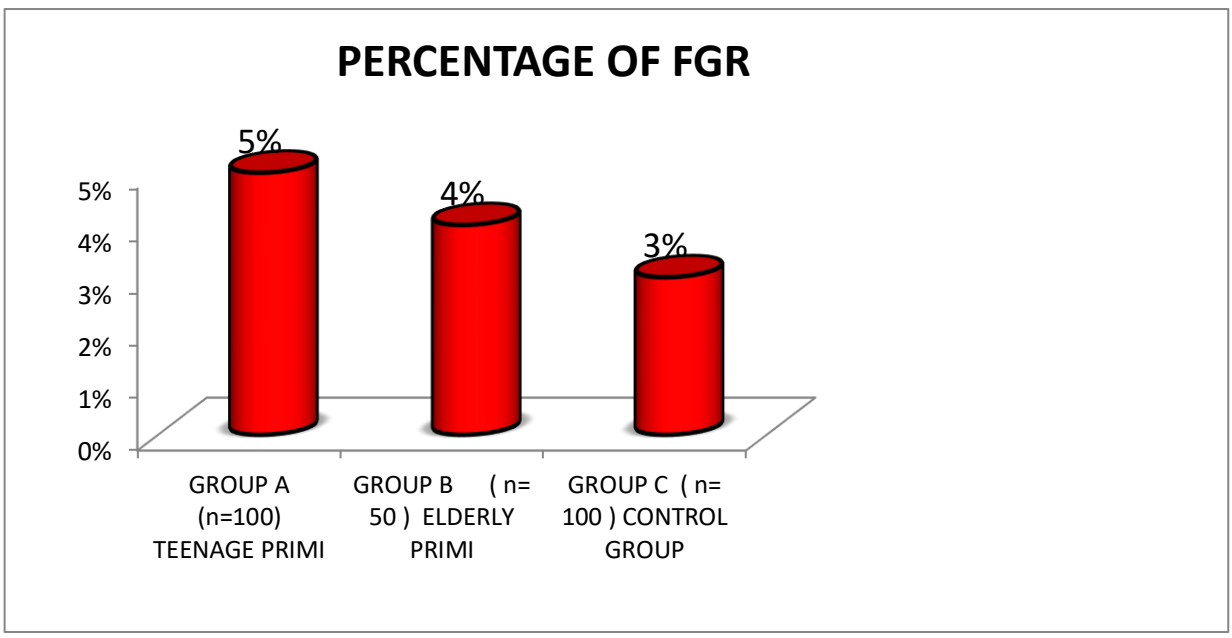
Statistically insignificant.

5.7 INCIDENCE OF FGR

TABLE NO 13

FGR	GROUP A (n=100) TEENAGE PRIMI	GROUP B (n=50) ELDERLY PRIMI	GROUP C (n=100) CONTROL GROUP
NUMBER OF FGR	5	2	3
PERCENTAGE OF FGR	5%	4%	3%

FIGURE 8



Out of the 100 teenage primigravida mothers, growth restriction of fetus occurred in 5 of them and in 4 of the 50 elderly primigravida mothers and in 3 young adult primigravidas.

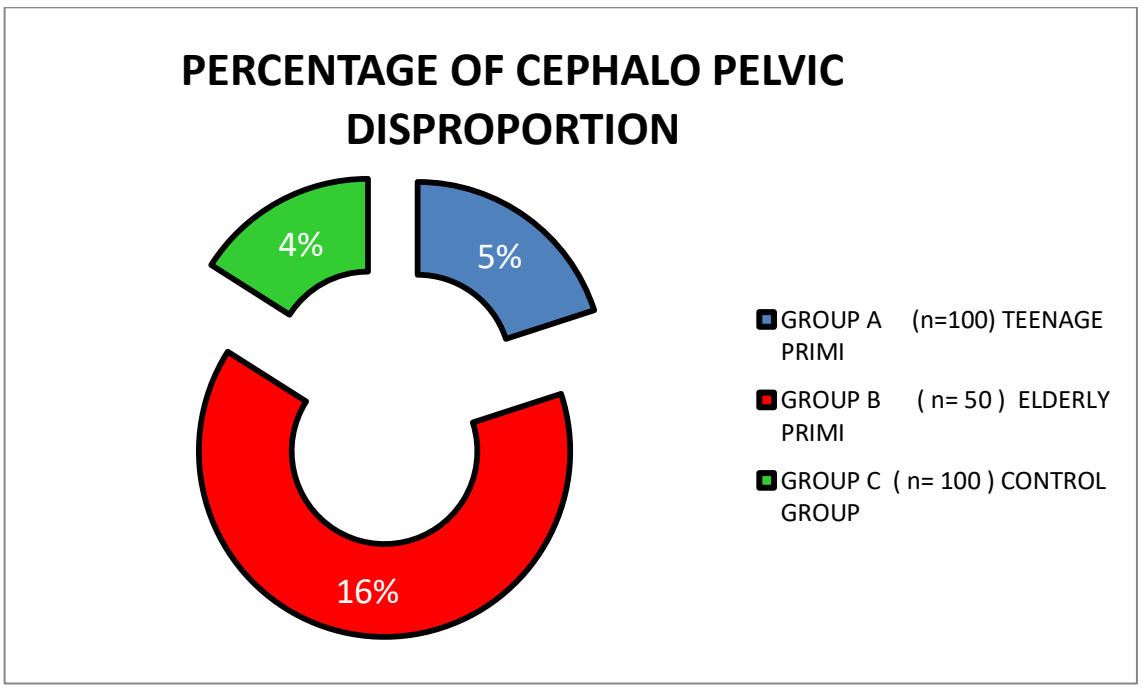
Statistically insignificant.

5.8 INCIDENCE OF CEPHALO PELVIC DISPROPORTION

TABLE NO 14

CEPHALO PELVIC DISPROPORTION	GROUP A (n=100) TEENAGE PRIMI	GROUP B (n=50) ELDERLY PRIMI	GROUP C (n=100) CONTROL GROUP
NUMBER OF CEPHALO PELVIC DISPROPORTION	5	8	4
PERCENTAGE OF CEPHALO PELVIC DISPROPORTION	5%	16%	4%

FIGURE 9



Cephalo pelvic disproportion was there in 16% of the elderly primigravidas which is statistically significant [p_2-value=0.010] than in the young adult primigravidas

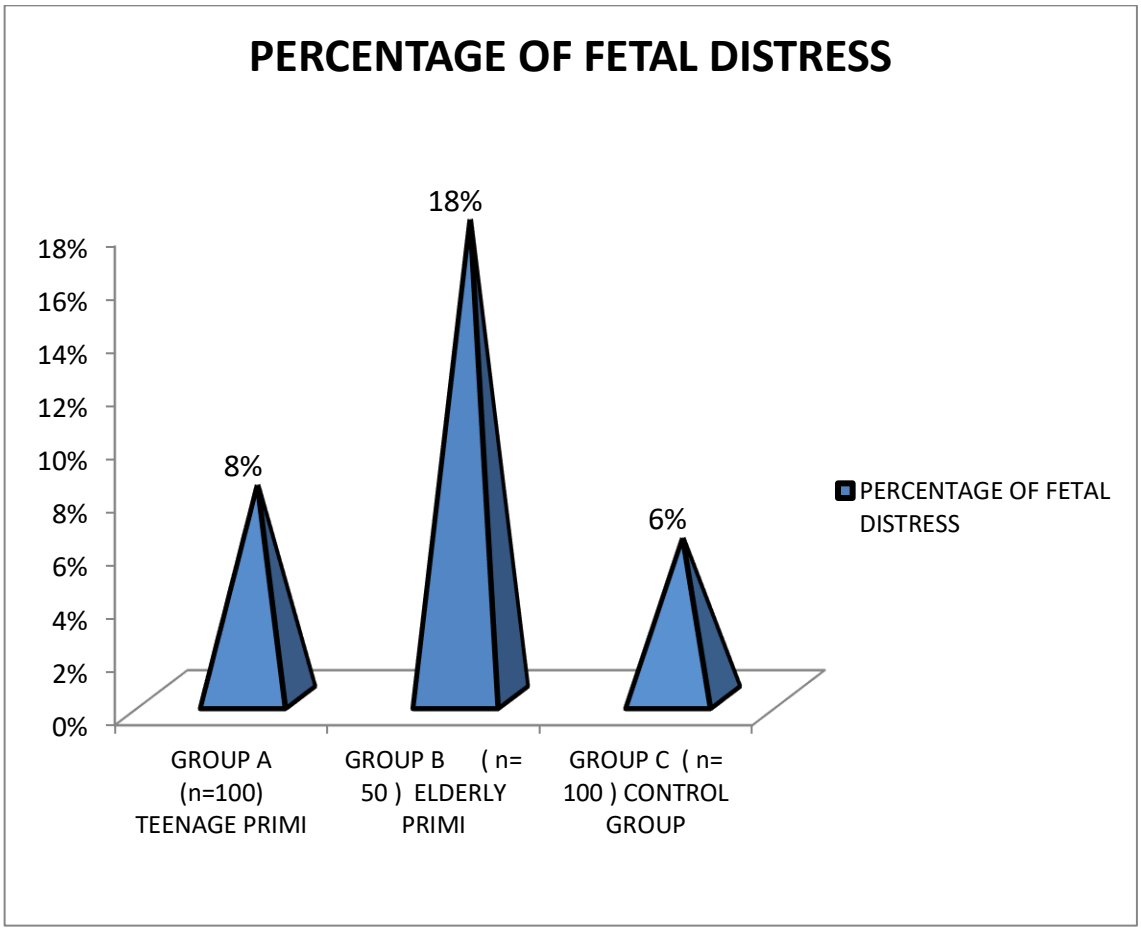
5% of the teenage primigravidas had cephalo pelvic disproportion which is statistically insignificant compared to the control group.

5.9 INCIDENCE OF FETAL DISTRESS

TABLE NO 15

FETAL DISTRESS	GROUP A (n=100) TEENAGE PRIMI	GROUP B (n=50) ELDERLY PRIMI	GROUP C (n=100) CONTROL GROUP
NUMBER OF FETAL DISTRESS	8	9	6
PERCENTAGE OF FETAL DISTRESS	8%	18%	6%

FIGURE 10



9 (18%) fetuses of the elderly primigravidas went into fetal distress [p_2= 0.020] which is statistically significant.

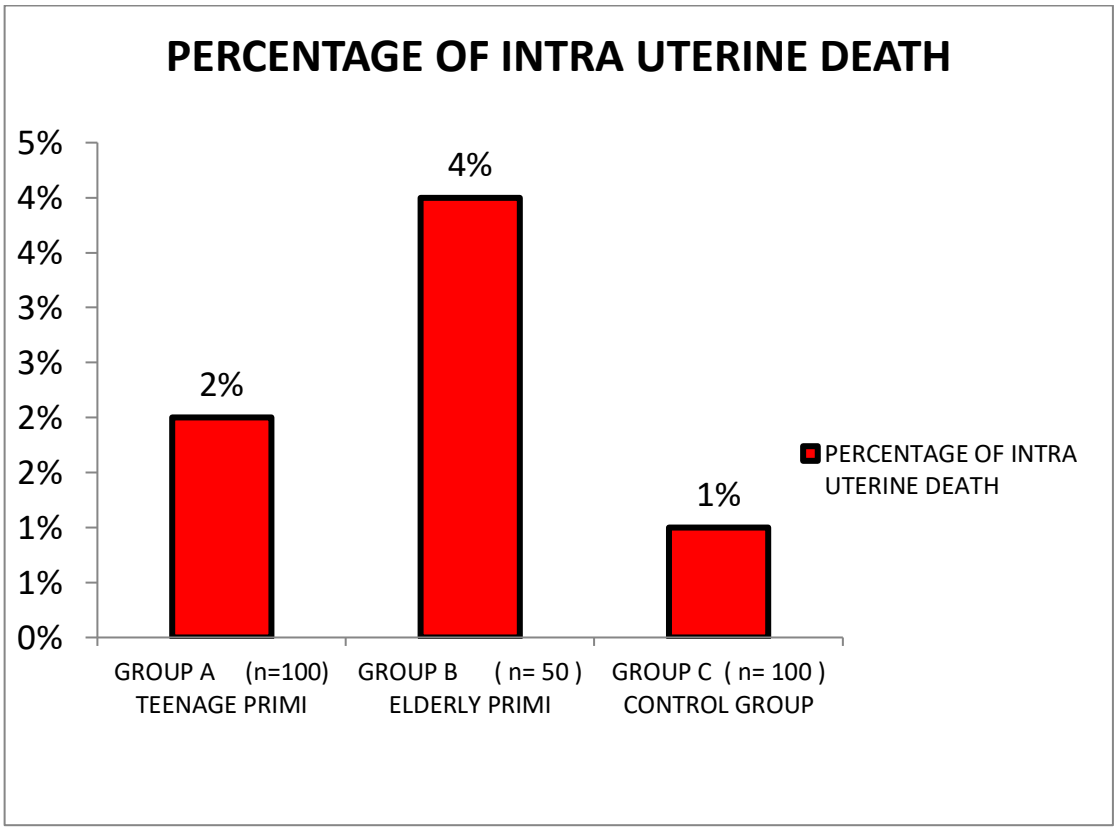
The incidence of fetal distress among the group A and group C were almost same. Statistically insignificant; p_1= 0.579

5.10 INCIDENCE OF INTRA UTERINE DEATH

TABLE NO 16

INTRA UTERINE DEATH	GROUP A (n=100) TEENAGE PRIMI	GROUP B (n=50) ELDERLY PRIMI	GROUP C (n=100\) CONTROL GROUP
NUMBER OF INTRA UTERINE DEATH	2	2	1
PERCENTAGE OF INTRA UTERINE DEATH	2%	4%	1%

FIGURE 11



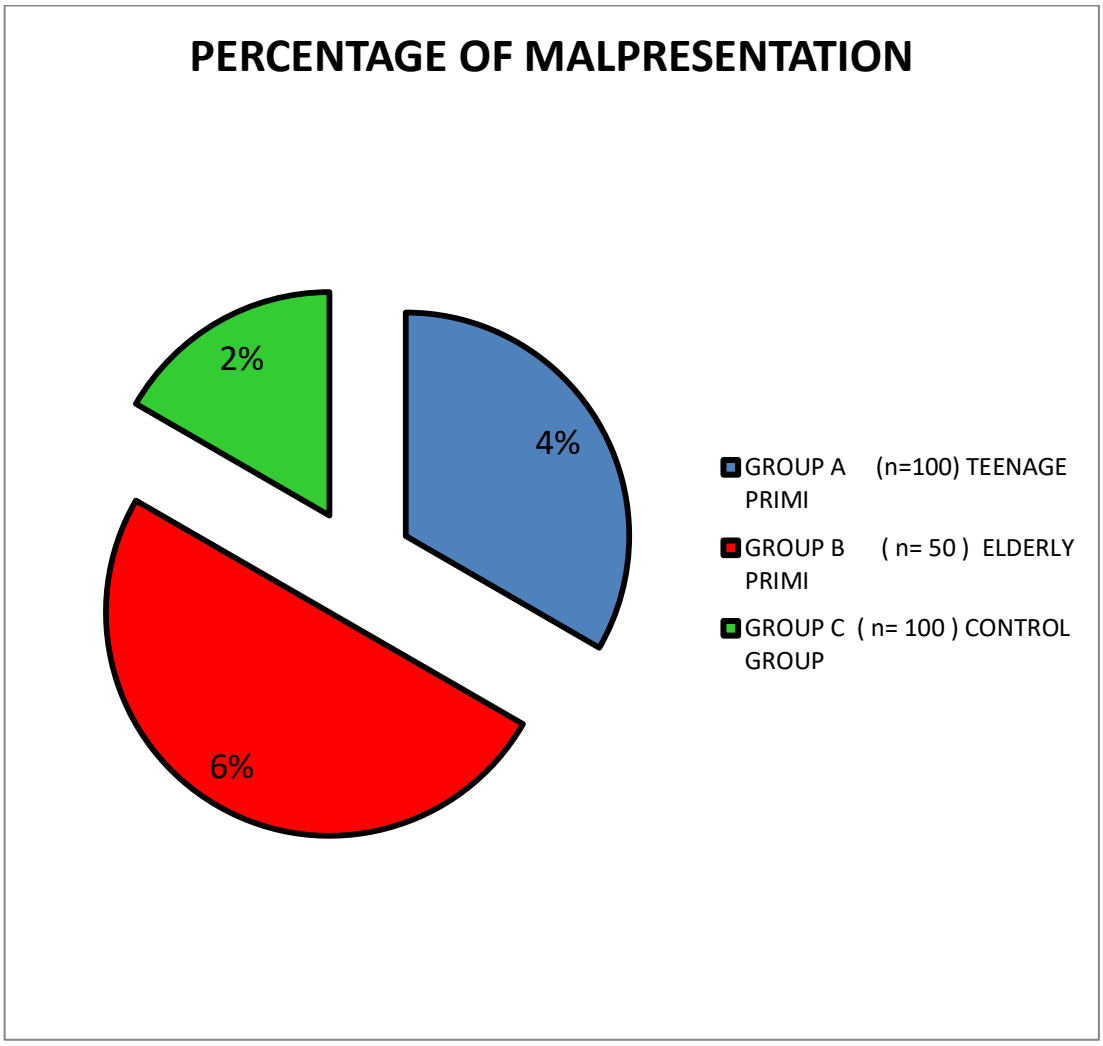
2 fetuses among the 50 elderly primigravidas and 2 among the 100 teenage primigravidas went into intra uterine deaths. $p_{1=}$ 0.560; p_2= 0.216. both are statistically insignificant.

5.11 INCIDENCE OF MALPRESENTATION

TABLE NO 17

MALPRESENTATION	GROUP A (n=100) TEENAGE PRIMI	GROUP B (n=50) ELDERLY PRIMI	GROUP C (n=100) CONTROL GROUP
NUMBER OF MALPRESENTATION	4	3	2
PERCENTAGE OF MALPRESENTATION	4%	6%	2%

FIGURE 12



The percentage of malpresentation is higher in study group B (6%) in comparison to the control group group C.

p_1= 0.407; p_2= 0.198

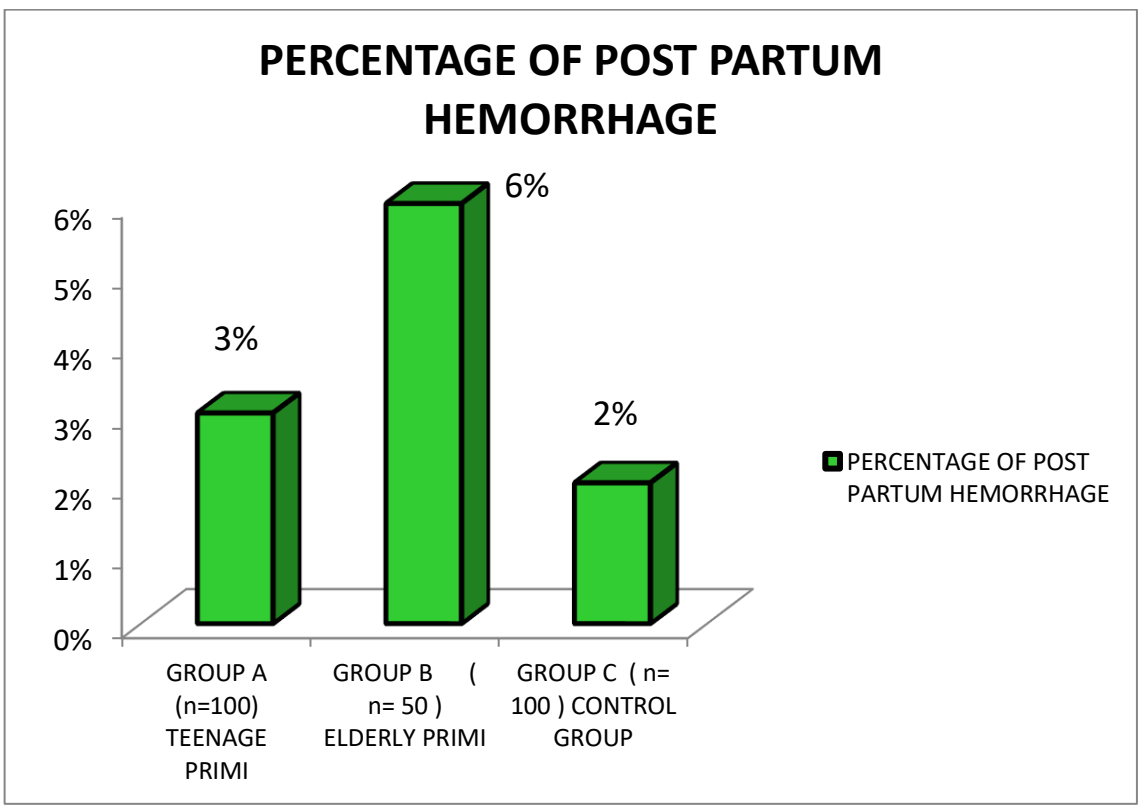
statistically insignificant

5.12 INCIDENCE OF POSTPARTUM HEMORRHAGE

TABLE NO 18

POSTPARTUM HEMORRHAGE	GROUP A (n=100) TEENAGE PRIMI	GROUP B (n=50) ELDERLY PRIMI	GROUP C (n=100) CONTROL GROUP
NUMBER OF POST PARTUM HEMORRHAGE	3	3	2
PERCENTAGE OF POST PARTUM HEMORRHAGE	3%	6%	2%

FIGURE 13



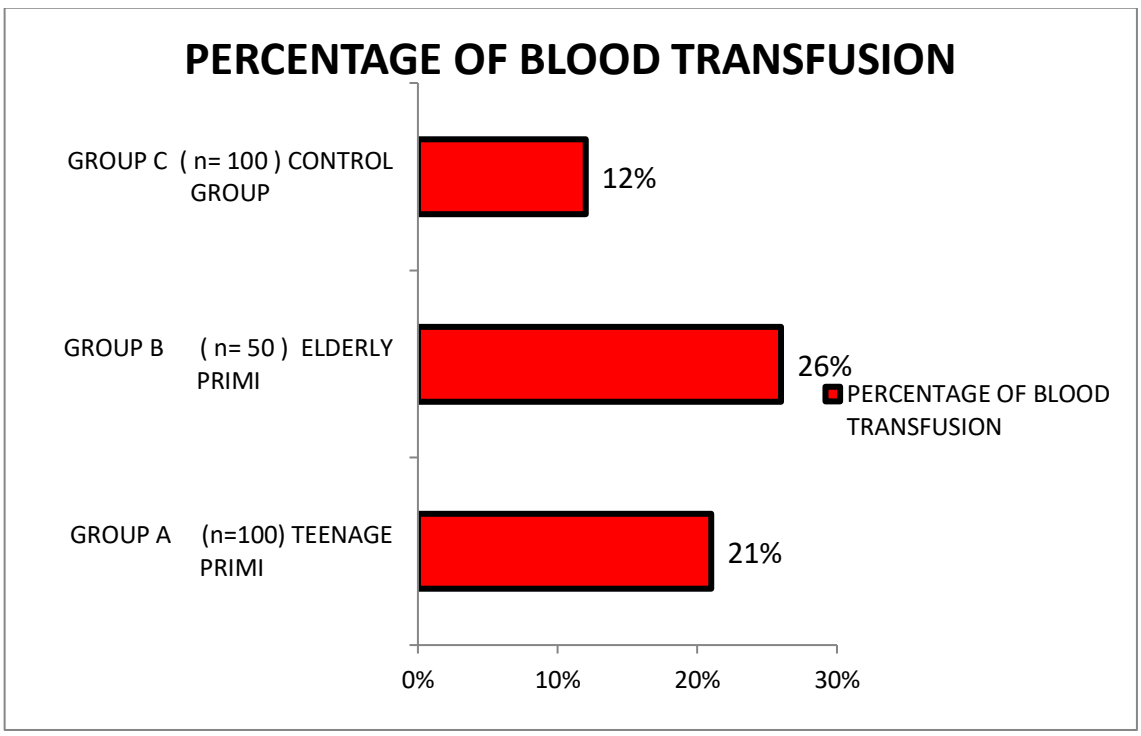
PPH occurred in 6% of the elderly group and in 3% of the teenage group and in 2% of the control group which is statistically insignificant.

5.13 BLOOD TRANSFUSION

TABLE NO 19

BLOOD TRANSFUSION	GROUP A (n=100) TEENAGE PRIMI	GROUP B (n=50) ELDERLY PRIMI	GROUP C (n=100) CONTROL GROUP
NUMBER OF BLOOD TRANSFUSION	21	13	12
PERCENTAGE OF BLOOD TRANSFUSION	21%	26%	12%

FIGURE 14



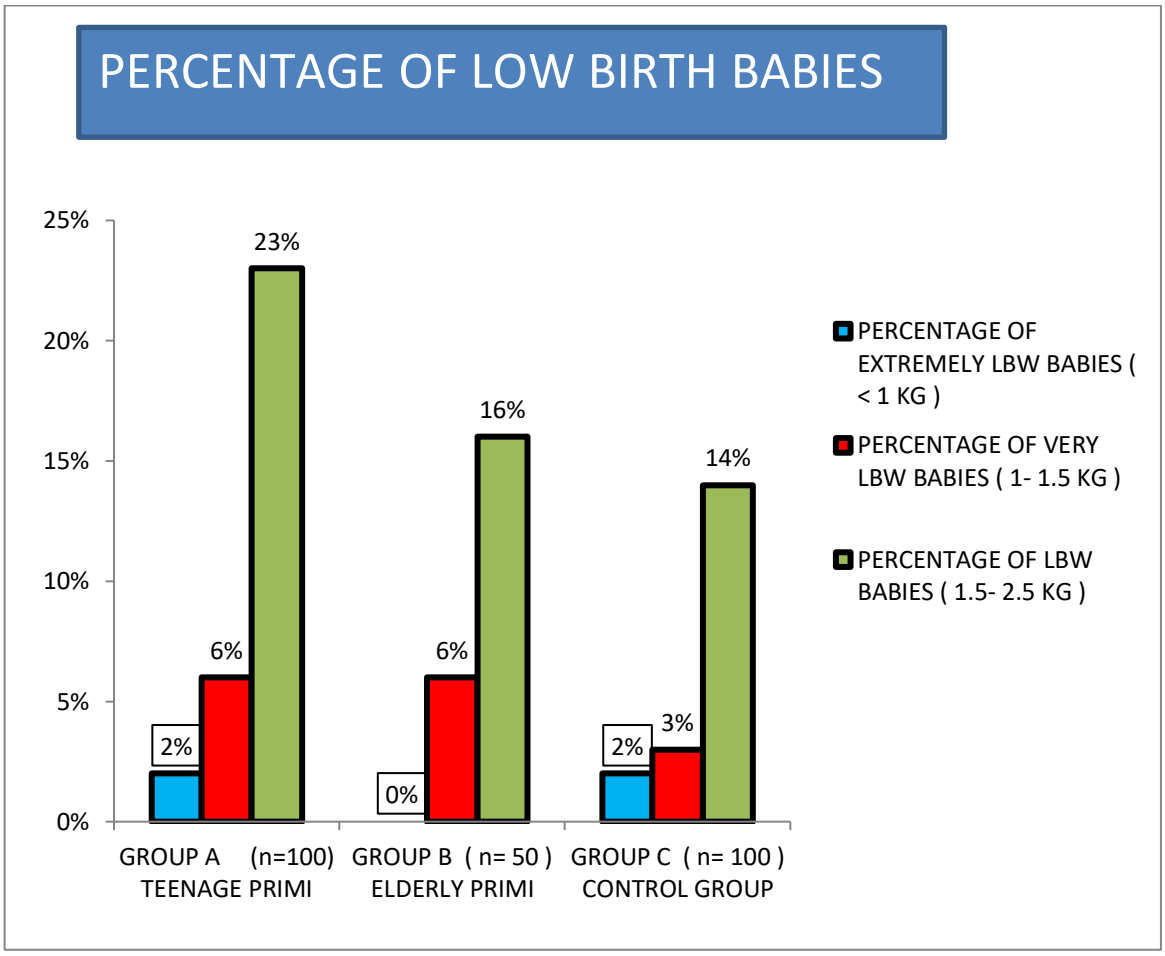
13 mothers among the 50 in the eldelry group and 21 mothers among the 100 in the teenage group required blood transfusion. p_1= 0.086 statistically insignificant . p_2= 0.030 statistically significant

5.14 INCIDENCE OF LOW BIRTH WEIGHT BABIES

TABLE NO 20

LOW BIRTH WEIGHT BABIES	GROUP A (n=100) TEENAGE PRIMI	GROUP B (n= 50) ELDERLY PRIMI	GROUP C (n=100) CONTROL GROUP
NUMBER OF EXTREMELY LBW BABIES (< 1 KG)	2	0	2
PERCENTAGE OF EXTREMELY LBW BABIES (< 1 KG)	2%	0%	2%
NUMBER OF VERY LBW BABIES (1- 1.5 KG)	6	3	3
PERCENTAGE OF VERY LBW BABIES (1- 1.5 KG)	6%	6%	3%
NUMBER OF LBW BABIES (1.5-2.5 KG)	23	8	14
PERCENTAGE OF LBW BABIES (1.5-2.5 KG)	23%	16%	14%

FIGURE 14



The percentage of very low birth weight and extremely low birth weight babies are almost same in all the three groups.

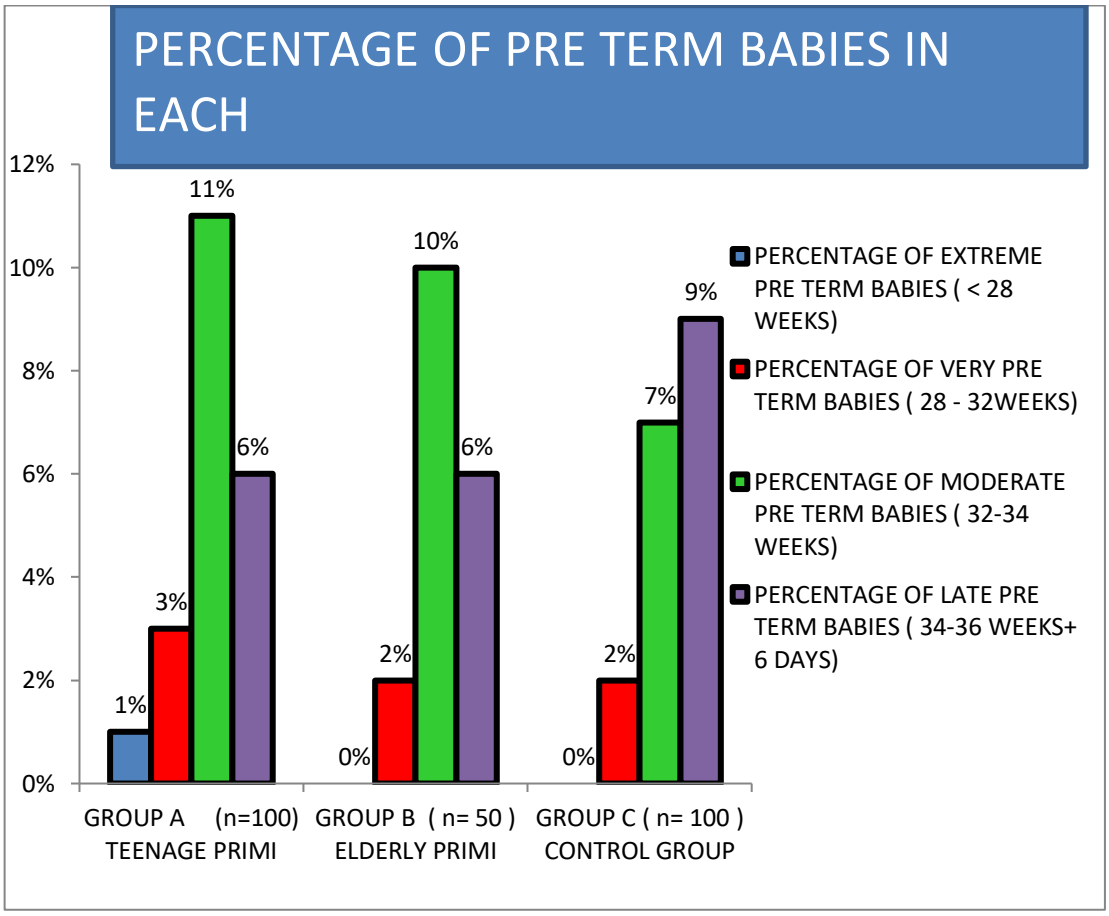
The incidence of low birth babies (1.5 – 2.5 kg) is 23% in study group A and 16% in study group B which is much higher than the control group C (14%); p_1= 0.050 which is statistically significant; p_2= 0.665 statistically insignificant.

5.15 INCIDENCE OF PRE TERM BABIES

TABLE NO 21

PRETERM BABIES	GROUP A (n=100) TEENAGE PRIMI	GROUP B (n=50) ELDERLY PRIMI	GROUP C (n=100) CONTROL GROUP
NUMBER OF EXTREME PRE TERM BABIES (< 28 WEEKS)	1	0	0
PERCENTAGE OF EXTREME PRE TERM BABIES (< 28 WEEKS)	1%	0%	0%
NUMBER OF VERY PRE TERM BABIES (28 - 32WEEKS)	3	1	2
PERCENTAGE OF VERY PRETERM BABIES (28-32WEEKS)	3%	2%	2%
NUMBER OF MODERATE PRE TERM BABIES (32-34 WEEKS)	11	5	7
PERCENTAGE OF MODERATE PRE TERM BABIES (32-34 WEEKS)	11%	10%	7%
NUMBER OF LATE PRE TERM BABIES (34-36 WEEKS+ 6 DAYS)	6	3	9
PERCENTAGE OF LATE PRE TERM BABIES (34-36 WEEKS+ 6 DAYS)	6%	6%	9%

FIGURE 16



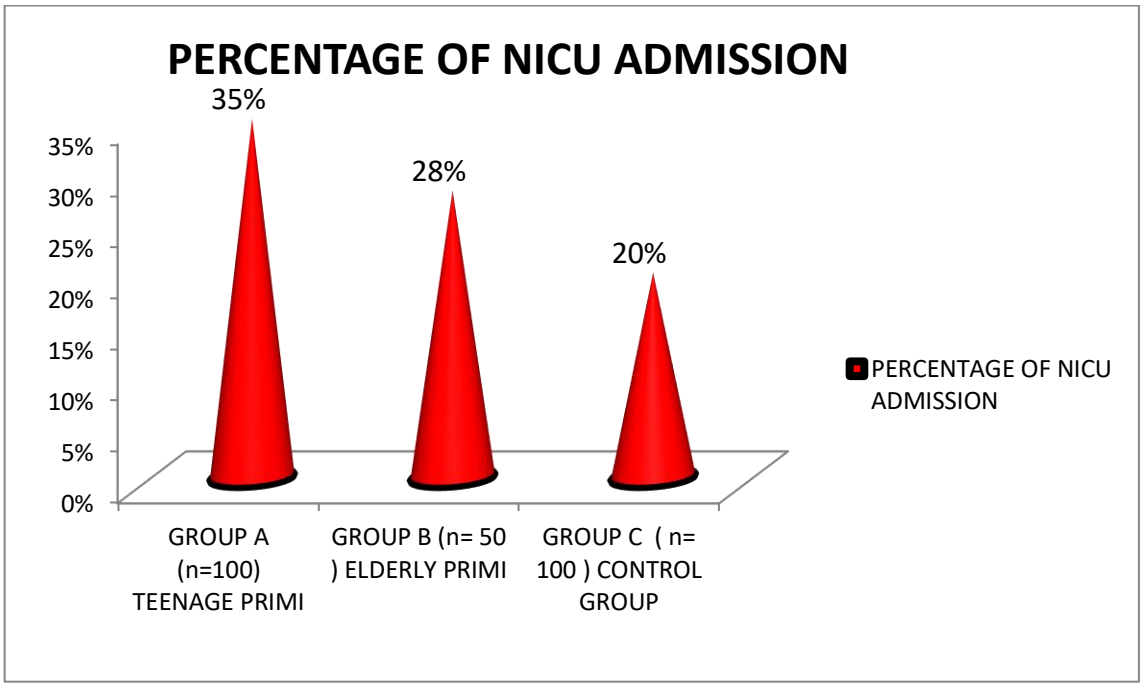
The above table summarizes the incidence of categories of preterm babies in all the three groups.

5.16 INCIDENCE OF NICU ADMISSION

TABLE NO 22

NICU ADMISSION	GROUP A (n=100) TEENAGE PRIMI	GROUP B (n=50) ELDERLY PRIMI	GROUP C (n=100) CONTROL GROUP
NUMBER OF NICU ADMISSION	35	14	20
PERCENTAGE OF NICU ADMISSION	35%	28%	20%

FIGURE 17



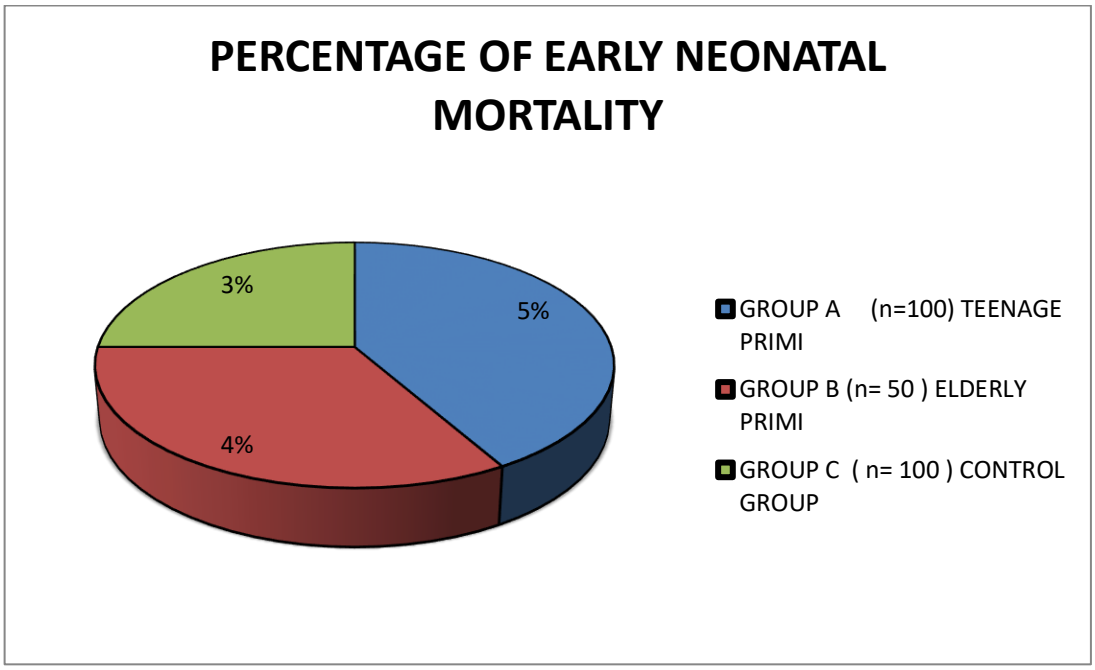
The incidence of NICU admission is statistically higher in the study group A (35%). p_1= 0.017 statistically significant. p_2= 0.269 statistically insignificant

5.17 INCIDENCE OF EARLY NEONATAL MORTALITY

TABLE NO 23

EARLY NEONATAL MORTALITY	GROUP A (n=100) TEENAGE PRIMI	GROUP B (n=50) ELDERLY PRIMI	GROUP C (n=100) CONTROL GROUP
NUMBER OF EARLY NEONATAL MORTALITY	5	2	3
PERCENTAGE OF EARLY NEONATAL MORTALITY	5%	4%	3%

FIGURE 18



The incidence of early neonatal mortality rate is 5% in the teenage group; 2% in the elderly group and 3% in the control group. Statistically insignificant among the groups.

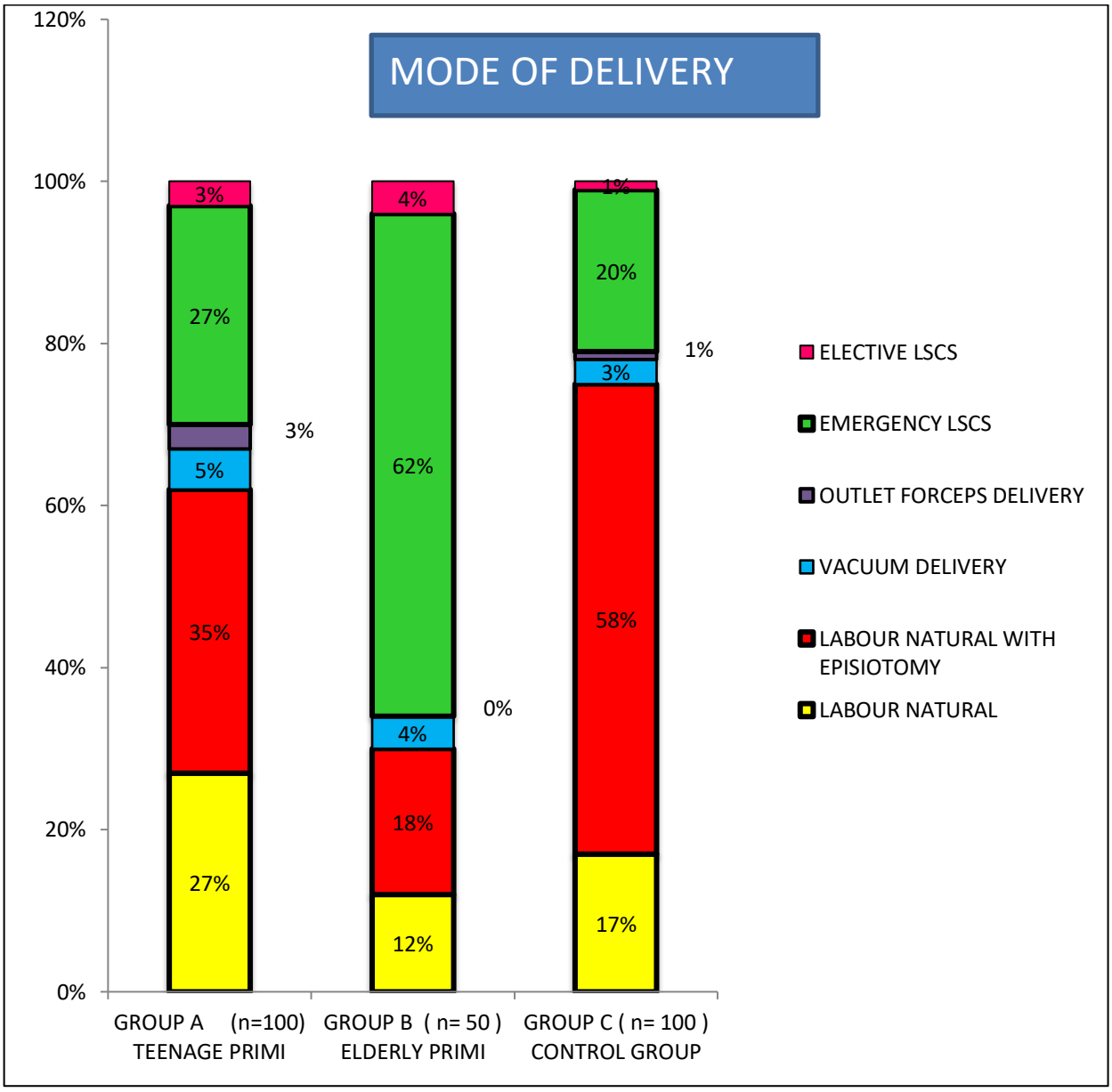
5.18 MODE OF DELIVERIES

TABLE NO 24

MODE OF DELIVERY	GROUP A (n=100) TEENAGE PRIMI	GROUP B (n=50) ELDERLY PRIMI	GROUP C (n=100) CONTROL GROUP
LABOUR NATURAL	27(27%)	6(12%)	17(17%)
LABOUR NATURAL WITH EPISIOTOMY	35(35%)	9(18%)	58(58%)

VACUUM DELIVERY	5(5%)	2(4%)	3(3%)
OUTLET FORCEPS DELIVERY	3(3%)	0(0%)	1(1%)
EMERGENCY LSCS	27(27%)	31(62%)	20(20%)
ELECTIVE LSCS	3(3%)	2(4%)	1(1%)

FIGURE 19



Among the teenage primigravidas 30% delivered by cesarean section; 60% by labour natural and 8% by instrumental delivery.

Among the elderly primigravidas 66% delivered by cesarean section, 30% by labour natural and 4% by instrumental delivery.

Among the control group 74% delivered by labour natural, 21% by cesarean section and 4% by instrumental delivery

The incidence of cesarean section rate is higher in elderly primigravidas (66%) and in teenage group 30% and 21% in control group.

p_1=0.144 statistically insignificant

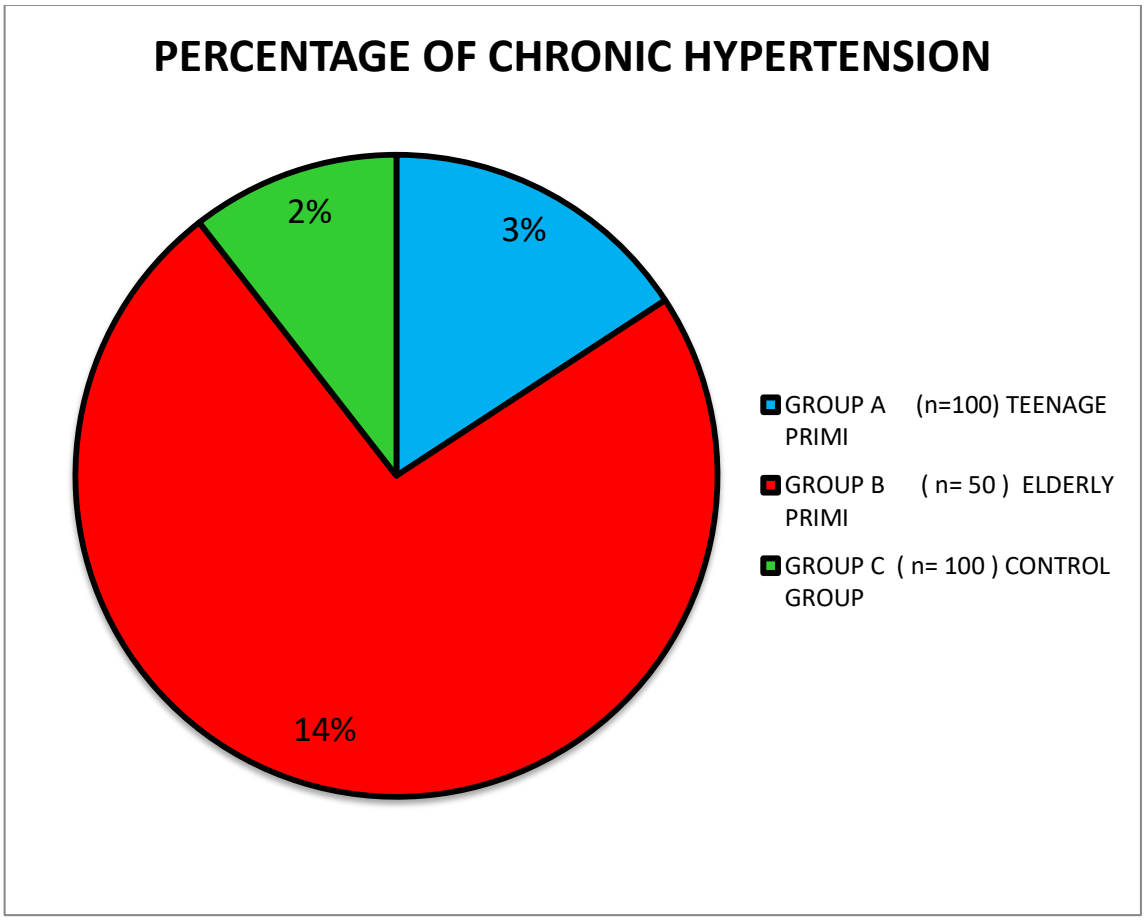
$p_2 < 0.0001$ statistically significant

5.19 INCIDENCE OF CHRONIC HYPERTENSION

TABLE NO 25

CHRONIC HYPERTENSION	GROUP A (n=100) TEENAGE PRIMI	GROUP B (n=50) ELDERLY PRIMI	GROUP C (n=100) CONTROL GROUP
NUMBER OF CHRONIC HYPERTENSION	3	7	2
PERCENTAGE OF CHRONIC HYPERTENSION	3%	14%	2%

FIGURE 20



The incidence of chronic hypertension is higher in elderly group (14%) compared to the control group C (2%).

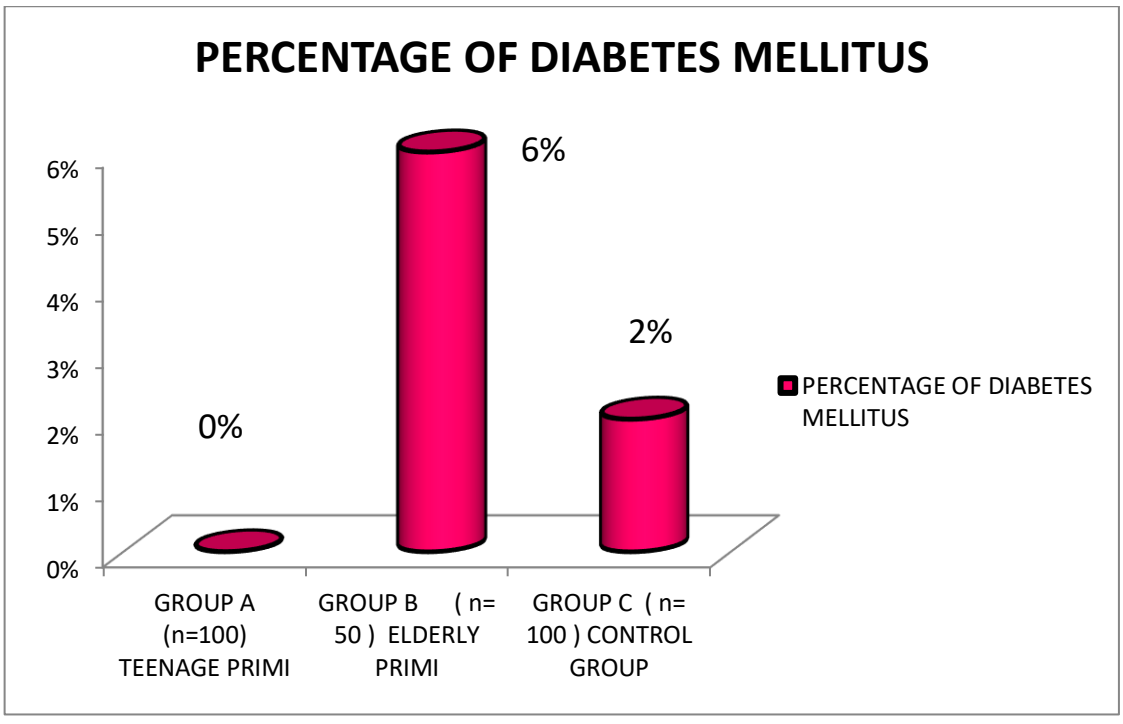
p_1=0.650 (statistically insignificant); p_2= 0.003 (statistically significant).

5.20 INCIDENCE OF OVERT DIABETES MELLITUS

TABLE NO 26

OVERT DIABETES MELLITUS	GROUP A (n=100) TEENAGE PRIMI	GROUP B (n=50) ELDERLY PRIMI	GROUP C (n=100) CONTROL GROUP
NUMBER OF DIABETES MELLITUS	0	3	2
PERCENTAGE OF DIABETES MELLITUS	0%	6%	2%

FIGURE 21



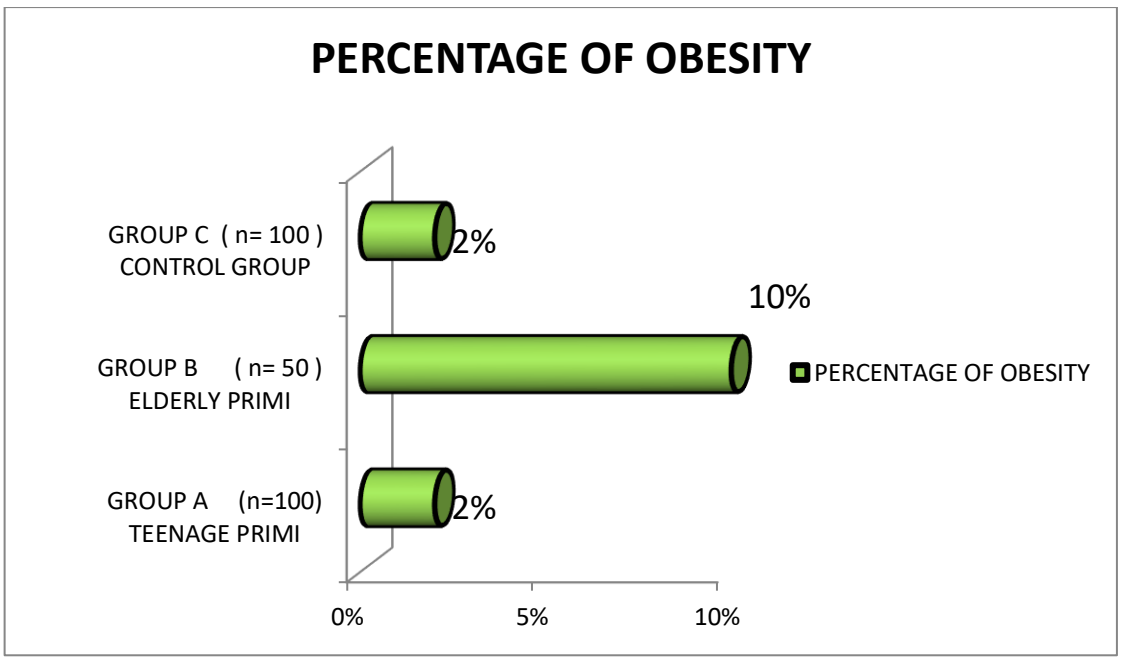
The difference in the incidence of diabetes mellitus is statistically insignificant among the three groups. p_1= 0.155. p_2= 0.198

5.21 INCIDENCE OF OBESITY

TABLE NO 27

OBESITY	GROUP A (n=100) TEENAGE PRIMI	GROUP B (n=50) ELDERLY PRIMI	GROUP C (n=100) CONTROL GROUP
NUMBER OF OBESITY	2	5	2
PERCENTAGE OF OBESITY	2%	10%	2%

FIGURE 22



The incidence of obesity is higher in the elderly group (10%). p_1= 1 (statistically insignificant); p_2= 0.028 (statistically significant).There is no statistically significant difference in the incidence of abortions, multiple pregnancy, abruption placenta, placenta previa between the study groups and the control group.

TABLE NO 28

Comparison of the variables between the study group A and control group C and their statistical significance

S.NO	MATERNAL COMPLICATIONS	STUDY GROUP (A) [n=100]	CONTROL GROUP(C) [n=100]	p- VALUE (p_1)
1	Anaemia	33	18	0.014
2	Hypertensive disorders of pregnancy	15	9	0.019
3	Hypothyroid	21	10	0.03
4	Heart disease	3	1	0.312
5	Abortion	3	1	0.312
6	Gestational diabetes mellitus	7	4	0.350
7	Low birth weight babies	31	19	0.050
8	Pre term babies	21	18	0.592
9	PROM/PPROM	5	4	0.733
10	FGR	5	3	0.47
11	CPD	5	4	0.733
12	IUD	2	1	0.560
13	Malpresentation	4	2	0.407
14	Post partum hemorrhage	3	2	1
15	Blood transfusion	21	12	0.086
16	Medical disorders complicating pregnancy	5	6	0.756
17	NICU admission	35	20	0.017
18	Early neonatal mortality	5	3	0.470

19	Normal vaginal delivery	60	74	0.047
	Instrumental delivery	8	4	0.050
	Cesarean section	29	21	0.144

TABLE 29

Comparison of the variables between the study group B and control group C and their statistical significance

S.NO	**MATERNAL COMPLICATIONS**	**STUDY GROUP (A) [n=100]**	**CONTROL GROUP(C) [n=100]**	**p-VALUE (p_2)**
1	Anaemia	18	18	0.014
2	Hypertensive disorders of pregnancy	29	9	<0.001
3	Hypothyroid	13	10	0.010
4	Heart disease	-	1	0.478
5	Abortion	-	1	0.478
6	Gestational diabetes mellitus	9	4	0.004
7	Low birth weight babies	11	19	0.665
8	Pre term babies	9	18	1
9	PROM/PPROM	2	4	1

10	FGR	2	3	0.740
11	CPD	8	4	0.010
12	IUD	2	1	0.216
13	Malpresentation	3	2	0.198
14	Post partum hemorrhage	3	2	0.747
15	Blood transfusion	13	12	0.030
16	Medical disorders complicating pregnancy	15	6	<0.001
17	NICU admission	14	20	0.269
18	Early neonatal mortality	2	3	0.470
19 **D S**	Normal vaginal delivery	15	7	<0.001
	Instrumental delivery	2	4	1
	Cesarean section	33	21	<0.001

DISCUSSION

TEENAGE PRIMIGRAVIDA

The present study on teenage and elderly pregnancy was undertaken with a view to know the incidence of teenage and elderly primigravidas and the proportion of maternal complications and fetal outcome in both the groups.

INCIDENCE

During the study period of one year, there were **412** teenage primigravidas and **118** elderly primigravidas including abortions, giving an incidence of teenage primi pregnancies to **8.45%** and elderly primi pregnancies to **2.42%.** The incidence in other Indian studies are:

TABLE 30

AUTHOR	YEAR	TEENAGE PREGNANCY INCIDENCE (%)
Seneesh K Vet al[89]	2015	2.81
Pranay Gandhi et al[90]	2014	19.9
Rita D et al[91]	2017	10.26

The teenage birth rate of India according to a UNFPA (2002) is 45/1000 women aged 15-19 years. The variations in the incidence may be due to the differences in the population catered to.

11 percent of the world's teenage pregnancies happen in India. According to the 2016 National Family and Health Survey (NFHS)-4, the incidence of teenage pregnancy is 7.9%. Over the past decade India has successfully reduced the proportion of teenage pregnancy from 16% (NFHS 3) to 7.9% (NFHS 4).

The reality is that early marriage and consequently pregnancy is most often not the result of a deliberate choice, but the absence of choices, and of circumstances beyond a girl's control. It is a consequence of little or no access to school, employment, reliable information about health care, poor utilization of health services.

In Indian culture adolescents have little access to correct and comprehensive information on family planning and access to contraceptives, whether married or not. Wives have little say in the number, timing and spacing of children. All these factors, taken together increase the likelihood of teenage pregnancies.

MATERNAL COMPLICATIONS

Tyre et al. in 1978 felt that inadequate diet and increased demands of growth results in increased risk to pregnant teenager and her foetus. Kaminetzky et al [23] have shown relationship between maternal malnutrition and increased incidence of anaemia, pre-eclampsia, prematurity and low-birth-weight in teenagers.

In the present study, 33% of teenagers had anaemia and 15% had hypertensive disorders of pregnancy in the study group (A) while 18% were anaemic and 9% had hypertensive disorders of pregnancy in the control group (C) with a statistical significance of p_1=0.019. There was also a significant difference between the

incidence of anaemia between the two groups p_1=0.014. There were two cases of eclampsia in the study group and one in the

control group.

Many other authors have reported increased incidence of anaemia and gestational hypertension in their study on teenage pregnancy.

TABLE 31

AUTHOR	**ANAEMIA (%)**	**HYPERTENSIVE DISORDERS OF PREGNANCY (%)**
Bhalerao [15]	25.5	10
Shobhana Patted et al	25	22.64
Porozhonova et al. [39]	13.6	32
Chahande MS [37]	-	20.56
Geist RR [44]	41	-
Pooja verma et al [92]	6	26
Present study	33	15

In the present study, 12% of the study group and 6% of the control group had preterm labour with a p_1=0.138 which is statistically insignificant. This is in accordance with the studies by various authors like Shobana Patted (12.83%), Bhalerao AR (16%) and Chahande M.S (16%)

In our study, there was 2 still births/intra uterine deaths (2%) in study group A versus 1 in the control group with a p_1 value of 0.560. This is probably due to the increased number of premature termination done in cases of severe pre-eclampsia. Chahande MS (2000) has reported an incidence of 5.4% still births in study group Vs 2.4% in control group. Studies by Pooja verma et al (2019) and Annet thatal (2020) also support this.

There was no significant difference in complications like abruption, malpresentations, twins, PROM and abruption between the study and control group.

MODE OF DELIVERY

In the present study, 60% of teenagers had normal vaginal delivery compared to 74% in the control group; 8% instrumental delivery in study group A as against 4% in the control group. The rate of caesarean section in study group A is 29% and 21% in the control group. The above data indicates that there is no significant difference (p>0.05) in cesarean section rate between teenagers and young adults. Annet thatal (2020), Rita D (2017)[91] and Mangala lakshmi(2018)

[94] have reported increased caesarean section rate of 67.5% , 47% and 45% respectively, Mehedra K et al [93] (2017) have reported low incidence (20.6%) in the teenage group.

TABLE 32

AUTHOR	**LABOUR NATURAL**	**LSCS**	**INSTRUMENTAL DELIVERIES**
Annet thatal	30%	67.5%	2.5%
K.Mangala Lakshmi et al [94]	52.3%	42.8%	4%
Meherda K et al [93]	69.3%	20.67%	10%
Present study	60%	29%	8%

PERINATAL COMPLICATIONS

Incidence of low-birth weight babies was increased in teenagers (31%) compared to control group (19%) with a significant p_1 value=0.050. The following studies have also reported increased incidence of prematurity and low birth weight babies.

TABLE 33

Author	Prematurity (%)	Low birth weight (%)
Rita D [91]	14.7	12.5
Kanti Meherda [93]	-	24
Seneesh K V [89]	17.1	77.2
Mangala Lakshmi [94]	23.9	-
Present study	**21**	**31**

There was increased incidence of NICU admission in the study group A (35%) than the control group (20%). The early neonatal mortality rate in the present study is 5%. Kanti Meherda et al has reported 5.3% and Seneesh K V has reported 8.6% early neonatal mortality rate in their studies.

ELDERLY PRIMIGRAVIDA

The purpose of this study is to examine the association of advanced maternal age with adverse maternal and fetal outcome. The results of this study demonstrate that advanced maternal age is associated with increased risk for a wide range of adverse pregnancy outcomes, NICU admission, low birth weight, low 5-minute Apgar score, pre term deliveries and increased maternal complications like anemia and hypertension. The rising trend of delayed childbearing secondary to education, career opportunities and assisted reproductive techniques allow these

findings to be of particular interest to both the women and their healthcare providers (Khalil, A et al.,2013).

The incidence of elderly primigravida in various studies are

TABLE 34

AUTHOR	YEAR	ELDERLY PREGNANCY INCIDENCE (%)
Annet Thatal et al[95]	2020	1.8
Kumudhini Pradhan et al [96]	2019	2.51
Present study		**2.42**

Among the antenatal complications, hypertensive disorders complicating pregnancy is the most common complication (58% vs 9%) correlating with that of the study by Achana et al.

Anemia has an incidence of 36% vs 18% respectively in study group B and the control group C. This could be probably because of poor nutrition, negligence in taking iron supplements, and low per capita income compromising again her nutrient intake.

The incidence of GDM is 18% vs 4%, which is similar to the incidence in Mexico (2 -6%). It also correlates with that of the study by Kirz et al (4% vs 1.7%).

The incidence of abortions,heart disease, placenta previa, abruption are statistically insignificant among the groups.

MODE OF DELIVERY

In the present study, 30% of the elderly primigravidas had normal vaginal delivery compared to 74% in the control group; the percentage of instrumental delivery is same as the control group (4%).

The incidence of cephalo pelvic disproportion is higher in the study group B 16% as compared to the control group 4%.

The rate of caesarean section in study group B is 66% and 21% in the control group. The above data indicates that there is significant difference ($p<0.05$) in cesarean section rate between elderly and young adults.

The incidence of mode of delivery in various Indian studies which are in accordance with our present study is given below

TABLE 35

AUTHOR	LABOUR NATURAL	LSCS	INSTRUMENTAL DELIVERIES
Rehman bu et al. (2017) [88]	35%	60%	5%
Annet thatal (2020) [95]	32.5%	67.5%	-
Vibha moses (2016) [97]	54%	40%	6%
Present study	30%	66%	4%

PERINATAL COMPLICATIONS

Incidence of low-birth weight babies in the present study is 22% in the elderly group as compared to control group (19%) which almost same with insignificant p value.

The incidence of premature babies was also same among the study group B and the control group C.

The incidence in various Indian studies are given below

TABLE 36

Author	**Prematurity (%)**	**Low birth weight (%)**
Moses v et al [97]	-	22%
Annet thatal (2020) [95]	3%	5.3%
Rehman bu et al [88]	10%	15%
Present study	**18%**	**22%**

There was increased incidence of NICU admission in the study group B, 28% than the control group 20%.

The early neonatal mortality rate in the study group is 4% and in the control group is 3%.

The incidence of chronic hypertension is 14% in the elderly group which is comparatively higher than the control group (2%).

The incidence of overt diabetes (6%) and obesity (10%) are also significant in the study group B than the control group.

CONCLUSION

India is growing to be a most populous country in world, and teenage pregnancy is likely to aggravate the problem. As teenage pregnancy is associated with increased incidence of preeclampsia, eclampsia, preterm delivery, increased incidence of instrumental deliveries and LSCS due to cephalopelvic disproportion, neonatal complications, increased neonatal morbidity and mortality mainly due to low birth weight, present study recommends that in order to improve the teenage health periodic information, education, community activities, ANC camps to be held at primary health care centers. Public awareness to be created regarding health of teenage girls and right of education to girls. Law against early marriage i.e. less than 18 years, need to be implemented strictly which will prevent substantiate number of teenage pregnancies, in turn obstetric complications, maternal and neonatal morbidity and mortality. In order to reduce the teenage pregnancies WHO Guidelines as stated below on preventing early pregnancy and poor reproductive outcomes amongst adolescents in developing countries has been recommended**. Reduce the number of marriage before 18 years. Prevent pregnancy before age of 20 years. Increased access of contraception. Reduce unsafe abortions among adolescents. Increased use of skilled antenatal check-up, child birth, post-natal care.**

Women with advanced maternal age are at higher risk of complications from conception till delivery with unpredictable outcome and should be provided close supervision for better pregnancy outcome. Nonetheless as age increases, they become more prone to obstetric complications along with medical complications concomitant with aging. Although the likelihood of complications increases with age, patients can be reassured that overall maternal and fetal outcomes are favourable with regular antenatal, emergency obstetric care and skilled personnel during labour. Early identification of women at an increased risk for adverse outcomes would help to facilitate surveillance and intervention.

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87. **PARIPEX -** INDIAN JOURNAL OF RESEARCH

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GLOSSARY

ANC- Antenatal care

ART- Anti Retroviral Therapy

CPD- Cephalo Pelvic Disproportion

FGR- Fetal Growth Restriction

GDM- Gestational Diabetes Mellitus

GHT- Gestational Hypertension

ICSI- Intra cytoplasmic Semen Insemination

IUD- Intra Uterine Death

LBW- Low Birth Weight

LSCS- Lower Segment Cesarean Section

MMR- Maternal Mortality Ratio

NICU- Neonatal Intensive Care Unit

OGTT-Oral Glucose Tolerance Test

OI- Ovulation Induction

PPH-Post Partum Hemorrhage

PROM- Premature Rupture Of Membranes

PPROM- Preterm Premature Rupture Of Membranes

WHO- World Health Oraganisation

PROFORMA

Name:

Age:

Ip.no:

Husband name:

Education:

Gravida: Para:

Abortions:

Gestational age:

Menstrual history:

Marital history:

LMP EDD

Gestational age at delivery:

Spontaneous conception/ Induced:

Past history:

Family history:

Personal history:

GENERAL EXAMINATION:

Built:

Anemia:

Pedal edema:

BMI:

MATERNAL COMPLICATIONS:

Anemia: GHT:

GDM: Hypothyroidism:

Pre eclampsia/ eclampsia:

Placenta previa: Abruption:

Jaundice:

Heart disease:

Multiple pregnancy:

Preterm labour:

PROM/ PPROM :

Obstructed labour:

Mode of delivery:

PPH:

Blood transfusion:

FETAL OUTCOME

Birth weight:

Term/ pre term:

Congenital anomalies:

FGR:

IUD:

APGAR:

NICU admission:

Labour onset: spontaneous/ induced

MASTER CHART

S.NO	NAME	AGE	AGE GROUP	ANAEMIA	GHT	HYPOTHYROID	HEART DISEASE	ABORTION	PREECLAMPSIA	ECLAMPSIA	GDM	CHRONIC HTN	TYPE I, II DM	OBESITY	PRE TERM LABOUR	IUGR	CPD	FETAL DISTRESS	IUD	PRESENTATION *	MODE OF DELIVERY	PPH	LBW **	PRE TERM ***	NICU ADMISSION	EARLY NEONATAL MORTALITY
1	KAVITHA	19	A	**Y**	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	**Y**	D	E	N	N
2	KAMATCHI	18	A	N	N	**Y**	**N**	N	**N**	N	N	N	N	Y	N	N	N	N	N	C	LN	N	D	E	N	N
3	SOWMIYA	19	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	**B**	LSCS.EL	N	D	E	**Y**	N
4	VIMALA	18	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
5	MAHALAKSHMI	19	A	**Y**	N	N	N	N	N	N	N	N	N	N	N	N	N	**Y**	N	C	LSCS .EM	N	D	E	**Y**	N
6	PAVITHRA	19	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
7	RISWANA IRFANA	19	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	**Y**	N	**B**	LSCS.EL	N	D	E	**Y**	N
8	PRAVEENA	19	A	N	N	N	N	N	N	N	N	N	N	N	**Y**	N	N	N	N	C	LN	N	A	A	**Y**	**Y**
9	SANDHIYA	18	A	N	**Y**	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LSCS .EM	N	D	E	N	N
10	JAYA	19	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
11	SATHIYA SHREE	17	A	**Y**	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	C	E	**Y**	N
12	KAVIYA	19	A	**Y**	N	N	N	N	N	N	N	N	N	N	**Y**	Y	N	N	N	C	LN	N	C	C	**Y**	N
13	VIJAYA	19	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
14	SNEKA	19	A	**Y**	N	**Y**	**N**	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
15	AMINA	18	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LSCS .EM	N	C	C	**Y**	N
16	KOWSALYA	18	A	N	N	**Y**	**N**	N	N	N	**Y**	**N**	N	N	N	N	**Y**	N	N	C	LSCS .EM	N	D	E	N	N
17	KANMANI	19	A	**Y**	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
18	NITHYA	19	A	N	N	N	Y	N	N	N	N	N	N	N	N	N	N	**Y**	N	C	OUTLET	N	D	E	**Y**	N
19	VIJAYA LAKSHMI	19	A	N	N	N	N	N	N	N	N	N	N	N	**Y**	Y	N	**Y**	N	C	LSCS .EM	N	C	C	**Y**	N
20	KARTHIKA	15	A	**Y**	N	**Y**	**N**	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
21	MEERA	17	A	**Y**	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	B	B	**Y**	**Y**
22	ANANDHI	19	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
23	PRADHEKSHA	19	A	N	N	N	N	N	Y	N	N	Y	N	N	N	N	N	N	N	C	LSCS	N	C	D	Y	N

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24	BRINDHA	19	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
25	JAYA BHARATHI	19	A	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	C	LSCS .EM	N	C	E	Y	N
26	FARHANA BEGAM	19	A	N	N	N	N	N	Y	N	N	Y	N	N	N	N	N	N	N	C	LSCS .EM	Y	A	E	Y	Y
27	GOMATHI	19	A	N	N	N	N	N	N	N	Y	N	N	N	Y	N	N	N	N	C	LN	N	C	D	Y	N
28	DHANA LAKSHMI	14	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
29	JAYANTHI	19	A	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
30	VENNILA	19	A	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	Y	D	E	N	N
31	SATHYA	19	A	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
32	AJANTHA	18	A	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LSCS .EM	N	D	E	N	N
33	SANTHIYA	19	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
34	GOWRI	19	A	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	B	LSCS .EM	N	D	C	Y	N
35	LAKSHMI	18	A	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	C	E	Y	N
36	NALINI	18	A	N	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	C	LN	N	D	E	N	N
37	YOGALAKSHMI	19	A	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LSCS .EM	N	D	E	N	N
38	RADHIGA	19	A	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	C	LN	N	B	B	Y	Y
39	RUKMANI	14	A	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
40	JAYANTHI	19	A	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	C	LSCS .EM	N	D	E	Y	N
41	SUBASHINI	19	A	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	C	LSCS.EM	N	D	E	N	N
42	DANALAKSHMI	19	A	Y	N	N	N	N	N	N	N	N	N	N	Y	Y	N	N	N	C	LN	N	B	B	Y	N
43	KARTHIGA	15	A	Y	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	C	LSCS.EM	N	D	E	N	N
44	PRIYADARSHINI	19	A	N	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
45	UDHAYANIDHI	19	A	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	C	E	Y	N
46	RAJALAKSHMI	19	A	Y	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	C	LSCS.EM	N	D	E	N	N
47	DURGADEVI	19	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	C	C	Y	N
48	SIVARANJANI	19	A	N	N	Y	N	N	N	N	Y	N	N	N	N	Y	N	N	N	C	LN	N	C	C	Y	N
49	ABINAYA	19	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
50	SNEHA	19	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	B	LSCS.EL	N	D	E	N	N
51	YOGESHWARI	19	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
52	ANJALI	19	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
53	BACHILA	19	A	Y	N	N	N	N	N	N	Y	N	N	N	N	N	N	Y	N	C	LSCS	N	D	E	N	N

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54	MUTHULAKSHMI	19	A	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	C	D	N	N
55	VELLAIYAMMAL	17	A	N	Y	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	C	LSCS.EM	N	D	E	Y	N
56	MURUGAVALLI	19	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LSCS.EM	N	C	D	N	N
57	ABITHERESA	19	A	N		Y	N	Y			N	N	N	N		N										
58	MANIMEGALAI	19	A	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
59	NANDHINI	18	A	Y	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
60	SOWMIYA	19	A	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	C	LSCS.EM	N	C	E	N	N
61	SANGEETHA	19	A	Y	N	Y	N	N	N	N	N	N	N	N	Y	N	N	N	N	C	LN	N	D	D	Y	Y
62	SARASWATHI	19	A	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	C	VACCUM	N	C	E	N	N
63	GAYATHRI	19	A	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	C	VACCUM	N	D	E	Y	N
64	GAYATHRI	19	A	N	Y	Y	N	N	N	AP	N	Y	N	N	N	N	N	N	N	C	LSCS.EM	N	D	E	N	N
65	ARUNA	19	A	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
66	ROHINI	19	A	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LSCS.EM	N	D	E	Y	N
67	MEGALA	19	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	C	E	N	N
68	SUBASHINI	19	A	N	N	Y	N	N	N	N	Y	N	N	N	N	N	N	N	N	C	LSCS.EM	N	D	E	N	N
69	AISHWARIYA	19	A	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
70	THAJI NISHI	19	A	N	N	N	N	N	Y	N	N	N	N	N	Y	Y	N	N	N	C	LN	N	C	E	Y	N
71	MAGESHWARI	19	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
72	ARTHI	19	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LSCS.EM	N	D	E	N	N
73	SNEHA	19	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	VACCUM	N	D	E	N	N
74	MANIMALA	19	A	N		N	N	Y			N	N	N	N		N										
75	SANDHIYA	19	A	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	VACCUM	N	D	E	Y	N
76	VEERASELVI	18	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
77	SURESH KUMARI	19	A	N		N	N	Y			N	N	N	N		N										
78	SENTHAMIL SELVI	19	A	Y	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
79	KANAGA VALLI	19	A	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	C	LSCS.EM	N	D	E	Y	N
80	ANITHA	19	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LSCS.EM	N	D	E	Y	N
81	ANANDHI	19	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	C	E	N	N
82	DEVIKA	19	A	Y	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	C	OUTLET	N	D	E	N	N
83	REVATHI	19	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	C	E	N	N

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84	VIJAYALAKSHMI	19	A	Y	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	N	C	LSCS.EM	N	D	E	N	N
85	VISHNU PRIYA	19	A	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	C	VACCUM	N	D	E	N	N
86	GAYATHRI	19	A	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	C	LN	N	B	C	Y	N
87	BOOMIKA	18	A	N	N	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	C	OUTLET	N	D	E	N	N
88	SANDHYA	19	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	B	C	Y	N
89	JOTHI	19	A	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	C	LN	N	C	C	Y	N
90	DEVIKA	19	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	C	LN	N	D	E	N	N
91	SEUREKA	18	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
92	ABITHA	17	A	N	N	N	N	N	N	PP	N	N	N	N	N	N	N	N	N	C	LN	N	C	E	N	N
93	SHEEBA	19	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
94	AJITHA	18	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	C	E	Y	N
95	MUTHULAKSHMI	19	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
96	JOTHI	19	A	Y	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	C	LN	N	C	C	Y	N
97	LAKSHMI PRIYA	19	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
98	INDHUMATHI	19	A	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	C	LN	N	B	C	N	N
99	SATHIYA	18	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
100	NANDHINI	19	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	D	N	N
101	RAJALAKSHMI	37	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	VACCUM	N	D	E	N	N
102	VANITHA	36	C	Y	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	N	C	LN	N	C	E	Y	N
103	RANI	35	C	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
104	KAVITHA	35	C	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	C	LSCS.EM	N	D	E	N	N
105	SUBULAKSHMI	36	C	N	Y	Y	N	N	N	N	Y	N	N	N	N	N	N	Y	N	C	LSCS.EM	N	D	E	Y	N
106	DEVI	35	C	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	C	LSCS.EM	N	D	E	N	N
107	UMAMAHESWARI	40	C	Y	N	Y	N	N	Y	N	N	Y	Y	Y	N	N	N	N	N	C	LSCS.EM	N	B	C	Y	Y
108	SANGEETHA	39	C	N	N	Y	N	N	Y	N	Y	Y	N	Y	N	N	N	N	N	C	LSCS.EM	N	D	C	Y	N
109	PRIYA	39	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LSCS.EM	N	D	E	N	N
110	THENMOZHI	39	C	Y	Y	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	C	LN	N	D	E	N	N
111	BUVANA	38	C	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	D	Y	N
112	KAMATCHI	36	C	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	B	LSCS.EL	N	D	E	Y	N
113	DEVI	36	C	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	Y	N	C	LSCS.EM	N	D	E	N	N

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114	ANITHA	35	C	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	C	LSCS.EM	N	D	E	Y	N
115	VINOTHINI	35	C	N	N	N	N	N	Y	N	N	Y	N	N	N	N	N	N	N	C	LSCS.EM	N	C	C	Y	N
116	SENKODI	39	C	N	Y	N	N	N	N	N	Y	N	N	N	N	N	N	N	Y	C	LN	N	C	C	N	N
117	KALIYAMMAL	35	C	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	C	LN	N	B	B	N	N
118	SATHIYA	35	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LSCS.EM	N	D	E	N	N
119	TAMIL ARASI	35	C	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	C	E	Y	N
120	MANIMEGALAI	37	C	Y	Y	Y	N	N	N	N	N	N	Y	N	N	N	Y	N	N	C	LSCS.EM	Y	D	E	N	N
121	SHANMUGA PRIYA	37	C	N	N	N	N	N	N	N	N	Y	N	Y	N	N	N	N	N	C	LN	N	D	E	N	N
122	VINODHINI	36	C	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	Y	N	C	LSCS.EM	N	D	E	N	N
123	RAGAVI	37	C	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LSCS.EM	N	D	E	N	N
124	MANJULA	36	C	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	C	LSCS.EM	N	D	E	N	N
125	ANJALI	37	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	C	LSCS.EM	N	D	E	N	N
126	ANITHA	36	C	N	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
127	REVATHI	36	C	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LSCS.EM	N	D	E	N	N
128	SANGEETHA	36	C	N	N	N	N	N	Y	N	N	Y	N	N	N	N	N	N	N	C	VACCUM	N	D	E	N	N
129	MANJU	35	C	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	C	LSCS.EM	N	D	E	N	N
130	KAVITHA	36	C	Y	Y	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	B	LSCS.EL	N	D	E	N	N
131	KALIYAMMAL	37	C	N	Y	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	C	LSCS.EM	N	C	E	Y	N
132	SURIYA	36	C	N	Y	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	C	LSCS.EM	N	D	E	N	N
133	MURUGATHAL	36	C	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	C	LSCS.EM	N	D	E	N	N
134	MURUGAVALLI	36	C	Y	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	Y	N	C	LSCS.EM	Y	C	D	Y	N
135	TAMILTHENDRAL	36	C	N	Y	Y	N	N	N	N	Y	N	N	N	N	N	Y	N	N	C	LSCS.EM	N	D	E	N	N
136	PREETHI	38	C	N	N	N	N	N	N	N	N	Y	N	Y	N	N	N	N	N	C	LN	N	D	E	N	N
137	PRIYANKA	37	C	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LSCS.EM	N	D	E	N	N
138	DEVAKI	35	C	N	N	N	N	N	Y	N	Y	N	N	N	N	N	Y	Y	N	C	LSCS.EM	N	C	D	Y	N
139	RAGAVI	37	C	N	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
140	PAVITHRA	36	C	Y	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	C	LSCS.EM	N	C	E	Y	N
141	NANDHINI	35	C	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	C	LSCS.EM	N	D	E	N	N
142	KUNDHAVAI	36	C	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	Y	D	E	N	N

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143	MEENATCHI	36	C	N	N	Y	N	N	N	N	Y	N	N	N	N	N	N	N	N	B	LSCS.EM	N	D	E	N	N
144	LAKSHMI	35	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LSCS.EM	N	D	E	N	N
145	KALAIVANI	36	C	Y	Y	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	C	LSCS.EM	N	D	E	N	N
146	SUHASINI	35	C	N	N	N	N	N	N	Y	Y	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
147	ANJALI	36	C	N	N	Y	N	N	Y	N	N	N	N	N	N	N	N	N	N	C	LN	N	B	C	Y	Y
148	AMALA	35	C	N	Y	N	N	N	Y	N	Y	N	N	N	N	N	N	Y	N	C	LSCS.EM	N	D	E	N	N
149	VIMALA	36	C	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
150	KAMALA	37	C	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LSCS.EM	N	D	E	N	N
151	KAMATCHI	24	B	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	C	LSCS.EM	N	D	E	N	N
152	KALAIVANI	23	B	N	N	N	N	N	N	N	Y	N	N	N	Y	N	N	N	N	C	LN	N	C	E	N	N
153	AMUDHA	27	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
154	ALAGI	32	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
155	PADHMA	26	B	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
156	MONISHA	27	B	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
157	BHUVANA	28	B	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
158	KANCHANA	24	B	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
159	RANJINI	25	B	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	C	LN	N	C	E	N	N
160	BARATHI	27	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
161	THENDRAL	29	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	B	LSCS.EL	N	D	E	N	N
162	SUNITHA	31	B	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
163	VIDHYA	24	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
164	SUSMITHA	26	B	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	D	Y	N
165	SHANMUGA PRIYA	31	B	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
166	SITHYA	25	B	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	C	LN	N	D	E	Y	N
167	SINDHUJA	24	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
168	SOWNDRAIYA	27	B	N	N	N	N	N	N	N	N	Y	N	N	Y	N	Y	N	N	C	LSCS.EM	N	C	D	Y	N
169	SNEKA	28	B	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
170	SUVEDHITHA	29	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
171	PRIYA	24	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N

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172	RANJINI	23	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	C	D	Y	N
173	VISHNU PRIYA	21	B	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
174	MANEESHA	26	B	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
175	LAKSHMI SRI	27	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LSCS .EM	N	D	E	N	N
176	INDHRA	26	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
177	KAVI ARASI	27	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
178	KARTHIKGA	24	B	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
179	KIRUTHIKA	26	B	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	C	LN	N	B	C	N	N
180	AMBIGA	27	B	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
181	DHANA LAKSHMI	23	B	Y	N	N	N	N	N	N	N	N	N	N	Y	N	N	Y	N	C	LSCS.EM	N	B	C	N	N
182	ANJANA	24	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	Y	N
183	KOWSALYA	25	B	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	C	D	Y	N
184	MEENATCHI	23	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
185	AMUDHA	25	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LSCS.EM	N	C	D	Y	N
186	KANAKI	24	B	N	N	N	N	N	N	N	Y	N	N	N	N	Y	N	N	N	C	LN	N	D	E	N	N
187	NANDHINI	26	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
188	PRIYANKA	27	B	N	N	Y	N	N	N	N	N	N	N	y	N	N	N	N	N	C	LSCS.EM	N	D	C	Y	N
189	SEETHA	31	B	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	C	LN	N	C	D	Y	N
190	NALINI	25	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	Y	N
191	SUBASHREE	27	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	Y	D	E	N	N
192	SARANYA	25	B	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	C	LN	N	B	C	N	Y
193	DEEPA	24	B	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
194	DIVYA	28	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
195	DEVI	24	B	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	Y	N	C	LSCS.EM	N	D	E	N	N
196	RAMYA	25	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
197	RENUGA	23	B	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	D	Y	N
198	SWETHA	23	B	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
199	KAMINI	23	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	C	E	N	N
200	LAKSHMI	24	B			N	N	Y				N	N	N							LSCS.EM					
201	ANJALI	24	B	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	C	VACCUM	N	D	E	N	N

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202	KANMANI	26	B	N	Y	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	C	LN	N	D	E	N	N
203	PODHUM PONNU	26	B	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	C	LN	N	D	E	Y	N
204	JANAKI	24	B	N	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	C	OUTLET	Y	C	E	N	N
205	VIMALA	23	B	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LSCS .EM	N	D	E	N	N
206	VENNILA	25	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	C	E	N	N
207	KARTHIGA	24	B	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	Y	N	C	LSCS.EM	N	D	E	Y	N
208	ARTHI	26	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	C	Y	N
209	NIVETHA	26	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	D	Y	N
210	NETHRA	22	B	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LSCS .EM	N	D	E	N	N
211	ABIRAMI	27	B	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LSCS.EM	N	D	E	N	N
212	ANANYA	27	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
213	ANUSHIYA	27	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	B	LSCS.EM	N	C	E	N	N
214	KALIYAMMAL	26	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
215	PREETHA	23	B	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
216	MONISHA	24	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	Y	N
217	GEETHA	21	B	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	C	LN	N	B	E	N	N
218	GANGA	26	B	Y	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	C	LSCS.EM	N	D	E	N	N
219	KAVI	27	B	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	C	E	N	N
220	PRABHA	29	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	C	LSCS.EM	N	D	E	N	N
221	FATHIMA	24	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	C	Y	N
222	JENEFER	23	B	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	VACCUM	N	D	E	N	N
223	PALKESH AMMA	25	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
224	DHIVYA	26	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
225	SWETHA	24	B	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	C	LSCS.EM	N	D	E	N	N
226	KAVIYA	24	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
227	KALAIVANI	23	B	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
228	SUHASINI	23	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LSCS .EM	N	D	E	N	N
229	SUGANYA	26	B	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
230	VASUGI	27	B	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	A	B	Y	Y
231	KANAKI	27	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	C	LSCS.EM	N	D	E	Y	N

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232	AMBIGA	24	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
233	PAVITHRA	25	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
234	JANANI	23	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
235	ARTHI	32	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
236	GAYATHRI	26	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	C	D	N	N
237	KRISHNAVENI	27	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	VACCUM	N	D	E	N	N
238	KAVITHA	25	B	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	C	LN	N	D	E	N	N
239	LAKSHMI	28	B	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	C	Y	N
240	MEENA	24	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
241	MANJU	25	B	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
242	NAVARATHINA	23	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	C	LN	N	D	E	N	N
243	THANGAMANI	24	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
244	FARHANA BEGAM	27	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
245	RIZVANA PARVEEN	29	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	A	B	Y	Y
246	JANANI	24	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
247	PERIYANAYAKI	26	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	Y	N
248	SUMATHI	24	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LSCS.EM	N	D	E	N	N
249	SULOKCHANA	26	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N
250	RANJINI	27	B	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	C	LN	N	D	E	N	N

PRESENTATION * - C-CEPHALIC, B-BREECH

LBW ** - A= < 1 KG; B= 1-1.5 KG; C- 1.5- 2.5 KG; D= > 2.5 KG

PRE TERM BABIES ***- A= < 28 WEEKS; B= 28-32 WEEKS; C= 32-34 WEEKS; D= 34-36WEEKS+6 DAYS; E= 37 WEEKS AND ABOVE

AGE GROUP= A- ≤19 YEARS; B- 20-34 YEARS; C- ≥ 35 YEARS