**Demographic study of premature Infants in Nasiriyah as a part of M.B.Ch.B requirement**

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**Dedication**

To our families for their prayers & support.

To our colleagues.

To our sick children in Nasiriyah.

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**Abstract**

**Introduction:**Preterm birth is a leading cause of perinatal mortality and long-term morbidity as well a***s*** he long-term health consequences and cognitive outcomes.

**Methodology*:*** This is a cross-section of 111 premature neonates who had been admitted to Neonatal care unit of pediatric hospital in bnt- alhouda and almousawy for the period ( 1st oct.-15th dec. 2018).

**Results**: Male premature neonates were more frequently than premature female .

The relationship between maternal age (years) and gestation age (weeks) at birth was not found to be significant.

The relationship between place of delivery (home, hospital ) and type of delivery ( normal vaginal , caesarean section ) was not found to be statistically significant.

The relationship between antenatal care and gestation age was not found to be statistically significant.

No role for consequently or family history in premature labour. .

**Conclusion**: prematurity more with caesarean section ,in housewife and most cases in reproductive age(20-30 yr) and also must cases admitted during first week of life.

**Keyword**: prematurity , Nasiriya city, risk factors

**Abbreviation**

PTB: preterm birth

ANC: antenatal care

UK: united kingdom

WHO: world health organization

LBW: low birth weight

IUGR: intrauterine growth restriction

NCU: neonate care unit

NICU: neonatal intensive care unit

PIH: pregnancy induced hypertension

APH: antepartum hemorrhage

UTI: urinary tract infection

FET: fisher's exact test

P v: p value

NVD: Normal vaginal Delivery

**INTRODUCTION**

Chapter 1

traditionally a delivery date is determined by 280 days after the last menstrual period however only 4% deliver at 280 days and only 70% deliver within 10 days of estimated delivery date . human gestation length from ovulation to birth may be 268 days with arange of 37 days (1)

live born infants delivered before 37 weeks from the 1st day of the last menstrual period are termed premature by world health organization (2)

preterm is defined as babies born alive before 37 weeks of pregnancy are completed . there are sub categories of preterm birth based on gestational age :

extremely preterm ( less than 28 weeks)

very preterm ( 28 to 32 weeks)

moderate to late preterm ( 32 to 37 weeks) (3)

every year an estimated 15 million babies are born preterm ( before 37 completed weeks of gestation ) and this number is rising (4)

the incidence of preterm births in the united states continues to rise and is partly a result of multiple gestation pregnancies and increasing reporting (7)

in the UK approximately 6\_7% of live births are low birth weight . about two\_third are preterm <37 weeks (5)

across 184 countries the rate of preterm birth ranges from 5% to 18% of babies born. (6)

more than 5% of deaths in children < 5 years of age occur within the 1st month of life with about half of the deaths attributable to prematurity. (7)

preterm birth complications are the leading cause of death among children under 5 years of age responsible for approximately 1 million death in 2015.(8)

many survivors face a lifetime of disability including learning and visual and hearning problems.(9)

most preterm births are "spontaneous" without an identifiable cause . genetic predispostion may increase the risk of prematurity. ( 10)

a strong positrive correlation exists between both preterm birth and IUGR and low socioeconomic status. such families have higher rates of maternal undernutrition; anemia; illness; inadequate prenatal care ; drug misuse ; obstetric complications and maternal history of reproductive inefficiency( abortions ; stillbirths; premature or LBW infants) (11)

the etiology of preterm birth is multifactorial and involve interaction between fetal; placental ; uterine and maternal factors

Table : Causes Of Preterm Birth:

\_Fetal : fetal distress; multiple gestation; erythroblastosis

\_Placental: placental dysfunction; placenta previa; abruptio placenta

\_Uterine: bicornuate uterus; incompetent cervix

\_Maternal: preeclampsia; chronic medical illness; infections; drug abuse

\_Others: premature rupture of membrane; polyhydramnios; iatrogenic; trauma (12)

preterm baby be: poor muscle tone ; lie in frog like position; relatively large head; prominant abdomen ; skin crease are poorly developed ; lanugo hair is often example steroid injprofuse; the skin is shiny and transparent with subcutaneous blood vessels visible and the scrotum underdeveloped and tests may be undescended. (13)

preterm babies associated with: respiratory distress syndrome; periventicular hemorrhage; poor temperature control ; increased susceptibility to infections ; feeding difficulties ; fluid and electolyte imbalance  (14)

WHO has developed new guidelines for improving outcomes of preterm births. this set of key interventions can improve the chances of survival and health outcomes for preterm infants. the guidelines include interventions provided to the mother \_for example steroid injections before births; antibiotcs when her water breaks before the onset of labour and magnesium sulfate to prevent future neurological impairment of the child \_ as well as intervention for the newborn baby \_ for example thermal care ; feeding support; safe oxygen use; and other treatment to help babies breathe more easily . (15)

survival about 95% at 30 or >30 weeks gestation . with optimal care ; >90% of preterm infant who survive have no serious neurological handicap. (16)

changes in neonatal care over the last 25 years have had a significant impact on infant morbidity and mortality . the increasing survival of low birth weight infant and especially those born at the limits of viability has created new challenges; in particular how best to reduce the increasing incidence of developmental delay , neurosensory impairment and cerebral palsy that accompanies extreme prematurity.(17)

in the mid 1970 Cornell and Gottfried summarized the literature on sensory stimulation of premature infants and concluded that the NICU environment was not lacking in stimulation but rather it was inconsistent and inappropriate to the needs of the newborn. Neonatal units are frequently places of extreme stimulation because they present experience which are not the norm for the developing infant.(18)

preterm formulae are based upon human milk. The principal difference are : more protein , more energy , higher sodium, calcium and phosphorus content, and the addition of iron and vitamins . The addition of long chain polyunsaturates, similar to those found in breast milk , has been shown to produce more rapid maturation of the visual pathway and may confer neurodevelopmental advantage. Preterm formula work well, growth rates are good , nutritional deficiencies are rare , and medium term growth and development outcome almost matches that seen with breast milk.(19)

birth weight reflecting both gestation and intrauterine growth , is a powerful predictor of mortality and morbidity in childhood. Globally 60-80% of neonatal death occur in low birth weight infants. In recent years it has been recognized that the effects of suboptimal birth weight may persist throughout life, with links being demonstrated between birth weight and cardiovascular and respiratory disease in adulthood . it appears that these adverse effects have a nearly linear relationship with birth weight rather than simply being associated with the lower extreme of the birth weight distribution.(20)

many of the determinants of both prematurity and poor intrauterine growth remain to be elucidated, although some specific conditions such as preeclamptic toxemia are important in individuals'. Poor intrauterine growth is associated with smoking during pregnancy and with socioeconomic deprivation. Diet has often been suggested as a possible cause of intrauterine growth retardation but good evidence for this is lacking.(21)

**Aim of study:**

1-to estimate incidence of prematurity in Nasiriya city.

2- identify risk factors associated with prematurity.

**Methodology**

Study Design

A hospital based descriptive cross-sectional study was conducted using interviewer administered questionnaire.

Study area

In Nasiriya hospitals ( Bint Alhuda Hospital And Al-Habobi Hospital).

Participants

The study population comprised of all mothers who had live births at Nasiriya National Hospital and their newborns. A total of 111 mothers who met the eligibility criteria were enrolled into the study.

These mothers delivered a total of 331 babies 6-8 of which were twins.

Data collection

All mothers who had live births at Nasiriya hospitals in October 2018 to 15 of December were identified using the birth register within 24 h of delivery. Systematic sampling was used to recruit mother-baby pairs. Mothers were traced to the postnatal wards. Informed consent was obtained from the mothers and babies admitted to the newborn unit were also traced. A standard pretested questionnaire was administered to the mothers while additional data was obtained from the mothers’ and babies’ medical records as required. Information collected from the mother included maternal age,job of mother , paternal age, job of paternal, consanguinity, address, maternal disease , any drugs taking in pregnancy , occupation, smoking during pregnancy, order of baby and history of previous preterm birth. Information obtained from medical records included antenatal clinic (ANC) attendance and number of visits, hemoglobin level, mode of delivery, place of labor, onset of labor , pregnancy outcome (singleton or multiple), birth weight, name of baby, age of baby at taking history , baby’s gender, pregnancy induced hypertension (PIH), or treatment for urinary tract infection (UTI)

Preterm birth was defined as a gestation of less than 37 completed weeks. Prematurity was further categorized as extreme less than 28 weeks ,severe(28-31 weeks),moderate (32-33 weeks ) and late premature( 34-36 weeks ) preterm or near term .

Statistical analysis: by using SPSS Version 23 and T-TEST also CHI SQUARE, P value which be significance if <.05

**Results & Discussion**

Chapter 2

Table (1): Age distribution in premature infant

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | | | | |
|  | | Frequency | Percent |
| Valid | 1-7 day | 72 | 64.9 |
| 8-14 day | 24 | 21.6 |
| 15-21 day | 11 | 9.9 |
| >21 day | 4 | 3.6 |
| Total | 111 | 100.0 |

The table show of 111 cases premature , 72 (64.9%) were in first group(1-7 day) , 24(21.6%) were in second group (8-14),

11(9.9%) were in third group (15-21) , while only 4(3.6%) in last group.

This result show that high percentage is first group(1-7 day) due this group usually admitted to hospital for treatment some disease and also for monitoring, and only few cases need long admition

Table (2) : distribution of premature according to sex

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | | | | |
|  | | Frequency | Percent |
| Valid | Male | 75 | 67.6 |
| female | 36 | 32.4 |
| Total | 111 | 100.0 |

This table show the prematurity high in male(67.6%) in compared with female(32.4)

Due to male gender associated factor that predispose to infection mediated preterm birth may play greater roles in populations at higher risk

For reproductive tract infection during pregnancy, and weigh of male less than female(22).

Also same result found in many study(23).

And this result may due to the study is cross sectional and this may reflect this study only and may in another study is equal of both sex.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Table (3): Distribution of premature infant according to gestational age | | | | |
|  | | Frequency | Percent |
| Valid | <28 week | 5 | 4.5 |
| 28-32 week | 36 | 32.43 |
| 33-36 week | 70 | 63.06 |
| Total | 111 | 100.0 |

The table show that only (4.5%) below 28 weeks, (28.8%) between28-32 weeks and the large percentage (74%)

At 32-37 weeks,

Same results present in study(prevalence and risk factor related to preterm birth in brazil).

And high percentage in third group(33-36wk) due to planning of doctors is the delivery must be near term as possible to prevent complication of prematurity and also some facilities control pregnant lady and prevent early delivery.

Table (4): Weigh of premature infant

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | | | | |
|  | | Frequency | Percent |
| Valid | <2.5 KG | 64 | 57.7 |
| 2.5-3.4 kg  >3.4 KG | 41  6 | 36.93  5.40 |
| Total | 111 | 100.0 |

The table show the highest percentage is low birth weight (64%)

That reflex association between preterm and LBW, as is know that premature infant is low birth weight(24)

Table (5): mode of labour in premature infant

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | | | | |
|  | | Frequency | Percent |
| Valid | normal vaginal delivery | 47 | 42.3 |
| cesarean section | 63 | 56.8 |
| assissted vaginal delivery | 1 | .9 |
| Total | 111 | 100.0 |

Table show that 47(42.3%) cases by NVD, while 63(56.8%) was by C/S and only 1 case assisted vaginal delivery ,

The optimal mode of **delivery** for women thought to be in **preterm** labour is controversial. Claims that planned **preterm caesarean delivery** reduces the chances of fetal or neonatal death

and **birth** trauma have been met by counter claims that such a policy leads to risk of serious morbidity for both mother and baby(25).

Also in addition for safety for fetus , the facilities and consult private clinic that increase C/S and also manage some emergency cases

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Table (6)  Distribution of cases according to place of birth | | | | |
|  | | Frequency | Percent |
| Valid | hospital | 108 | 97.3 |
| midwife | 1 | .9 |
| at home | 2 | 1.8 |
| Total | 111 | 100.0 |

Highest frequency of the neonates at hospital 108(97.3%) compare with midwife and at home

Due to most cases in study is caesarean section, also risk pregnant will do visit to hospital to control her delivery.

Most preterm birth need medical intervention so most cases at hospital. Also there is studies similar this result

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Table(7) Distribution of preterm labor according to maternal age | | | | |
|  | | Frequency | Percent |
| Valid | <20 year | 14 | 12.6 |
| 20-30 year | 59 | 53.2 |
| 30-40 year | 33 | 29.7 |
| >40 year | 5 | 4.5 |
| Total | 111 | 100.0 |

Table show highest percentage among (20-30) group approximately 53% then followed by (30-40)group 29.7%

Same result in many studies such as (prevalence and risk factors related to preterm births in brazil).

Second group(20-30 yr) was highest group may be this is reproductive age and also active age of pregnant mother such as some be employers,

Reduce preterm birth with increasing age due to complete the family and reduce reproductivity

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Table (8) : distribution of preterm birth according to job of mother | | | | |
|  | | Frequency | Percent |
| Valid | Housewife | 100 | 90.1 |
| Employer | 11 | 9.9 |
| Total | 111 | 100.0 |

Table show that 100 cases(90%) of preterm birth among housewife and

11 cases(9.9%) in employer mothers.

Some result found in studies(26) , this is may due to employer mothers have planning to their families versus to housewife mothers and do only few babies

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Table(9): distribution of reterm birth according to consanguinity | | | | | |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | relative | 44 | 39.6 | 39.6 | 39.6 |
| unrelative | 67 | 60.4 | 60.4 | 100.0 |
| Total | 111 | 100.0 | 100.0 |  |

Table show 67 cases(60.4%) were unrelative and 44 cases(39.6%) there are relation

Between mothers and fathers.

So this result explain there is no relationship between prematurity and consanguinity

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Table (10): family history of preterm birth | | | | |
|  | | Frequency | Percent |
| Valid | Positive | 29 | 26.1 |
| Negative | 82 | 73.9 |
| Total | 111 | 100.0 |

Table show most cases (73.9%) has not family history of preterm

So this result explain there is no relationship between prematurity and family history of preterm birth

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Table (11) : Distribution of maternal address in preterm births | | | | | |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | urban | 95 | 85.6 | 85.6 | 85.6 |
| rural | 16 | 14.4 | 14.4 | 100.0 |
| Total | 111 | 100.0 | 100.0 |  |

Table show that 95(85.6%) cases in urban area while 16(14.4%) cases in rural area

That may reflex facilities and easy to reach to hospital and also documented cases inverse to rural which not reach to hospital and so not documented.

In study of ( Estimation of preterm birth rate in Brazil) same result which high in urban.

|  |  |  |  |
| --- | --- | --- | --- |
| Table (12): Maternal disease | | | |
|  | | Frequency | Percent |
| Valid | Negative | 50 | 45.0 |
| DM | 5 | 4.5 |
| HT | 13 | 11.7 |
| Asthma | 2 | 1.8 |
| 0thers\* | 33 | 29.7 |
| Multiple disease | 8 | 7.20 |
| Total | 111 | 100.0 |

Table show that 50(45%) cases of mothers that has preterm labor were healthy , 33(29.7%) cases has different disease

Such as UTI or Anemia or Epilepsy , 13 (11.7%) cases has hypertension , 5(4.5%) cases has Diabetes Mellitus and also there is some anthers combined drugs

Disease of mothers in general lead to decrease immunity so this more risky for infection

And so premature rupture of membrane

Also same result in many studies such as (Estimation of preterm birth rate in brazil)

\**OTHERS DIEASE*: Anemia, hypotension, APLS, PREECLAMPSIA, migraine ,UTI, oligohydramnios, Epilepsy, thyrotoxicosis, gastric ulcer

|  |  |  |  |
| --- | --- | --- | --- |
| Table (13): Antenatal care of mothers | | | |
|  | | Frequency | Percent |
| Valid | Good | 99 | 89.2 |
| Poor | 11 | 9.9 |
| Total | 111 | 100.0 |

Table show that 99(89.2%) of cases has good ANC and 11 cases(9.9%) has poor ANC

Same result was in (Estimation of preterm birth rate in Brazil) study

So good ANC not increase preterm birth but reflex that the mothers has underlying disease.

Also good ANC reflex safety visit to care their fetus, and low percentage of poor ANC is due to it is not documented.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Table (14): Relationship between maternal age and gestational age** | | | | | | |
|  | | | GA | | | Total |
| <28 week | 28-32 week | 32-37 week |
| MA | <20 year | Count | 0 | 6 | 8 | 14 |
| % | 0.0% | 42.9% | 57.1% | 100.0% |
| 20-30 year | Count | 3 | 16 | 40 | 59 |
| % | 5.1% | 27.1% | 67.8% | 100.0% |
| 30-40 year | Count | 2 | 9 | 22 | 33 |
| % | 6.1% | 27.3% | 66.7% | 100.0% |
| >40 year | Count | 0 | 1 | 4 | 5 |
| % | 0.0% | 20.0% | 80.0% | 100.0% |
| Total | | Count | 5 | 32 | 74 | 111 |
| % | 4.5% | 28.8% | 66.7% | 100.0% |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Chi-Square Tests** | | | | | | | | | |
|  | Value | df | Asymptotic Significance (2-sided) | Monte Carlo Sig. (2-sided) | | | Monte Carlo Sig. (1-sided) | | |
| Significance | 99% Confidence Interval | | Significance | 99% Confidence Interval | |
| Lower Bound | Upper Bound | Lower Bound | Upper Bound |
| Pearson Chi-Square | 2.591a | 6 | .858 | .865b | .856 | .874 |  |  |  |
| Likelihood Ratio | 3.322 | 6 | .768 | .830b | .821 | .840 |  |  |  |
| Fisher's Exact Test | 2.313 |  |  | .893b | .885 | .901 |  |  |  |
| Linear-by-Linear Association | .200c | 1 | .655 | .737b | .725 | .748 | .366b | .354 | .378 |
| N of Valid Cases | 111 |  |  |  |  |  |  |  |  |
| a. 7 cells (58.3%) have expected count less than 5. The minimum expected count is .23. | | | | | | | | | |

The relationship between mother's age and gestational age was tested

By using Fisher's Exact Test(FET) and P value was 0.893

So it more than P v > .05 . which show no significant difference. There is no gross difference between the four age groups as to the distribution of gestational age.

The result similar to study in Iraq (Epidemiology and clinical study on infant admitted to NICU in KARKUK).

Table (15): Relationship between job of mother and gestational age

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | |
|  | | | GA | | | Total |
| <28 week | 28-32 week | 32-37 week |
|  | HOUSEWIFE | Count | 4 | 28 | 68 | 100 |
| % | 4.0% | 28.0% | 68.0% | 100.0% |
| Employer | Count | 1 | 4 | 6 | 11 |
| % | 9.1% | 36.4% | 54.5% | 100.0% |
| Total | | Count | 5 | 32 | 74 | 111 |
| % | 4.5% | 28.8% | 66.7% | 100.0% |

|  |  |  |  |
| --- | --- | --- | --- |
| **Chi-Square Tests** | | | |
|  | Value | df | Asymptotic Significance (2-sided) | | Monte Carlo Sig. (2-sided) | Monte Carlo Sig. (1-sided) |
| Significance | 99% Confidence Interval | Significance | 99% Confidence Interval |
| Lower Bound | Upper Bound |  | Lower Bound | Upper Bound |
| Pearson Chi-Square | 1.080a | 2 | .583 | | .610b | .597 | .623 |  |  |  |
| Likelihood Ratio | .963 | 2 | .618 | | .904b | .897 | .912 |  |  |  |
| Fisher's Exact Test | 1.794 |  |  | | .334b | .322 | .346 |  |  |  |
| Linear-by-Linear Association | 1.038c | 1 | .308 | | .403b | .390 | .415 | .221b | .211 | .232 |
| N of Valid Cases | 111 |  |  | |  |  |  |  |  |  |

a. 3 cells (50.0%) have expected count less than 5. The minimum expected count is .50.

FET=1.79 P v= The relationship between job of mother and gestational age was tested by Fisher's Exact test and show no significance

There is no difference between housewife and employer mothers

Table (16): relationship between mother address and gestational age

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | |
|  | | | GA | | | Total |
| <28 week | 28-32 week | 32-37 week |
| Residence | urban | Count | 4 | 26 | 65 | 95 |
| % | 4.2% | 27.4% | 68.4% | 100.0% |
| rural | Count | 1 | 6 | 9 | 16 |
| % | 6.3% | 37.5% | 56.3% | 100.0% |
| Total | | Count | 5 | 32 | 74 | 111 |
| % | 4.5% | 28.8% | 66.7% | 100.0% |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | |
| **Chi Square** | Value | df | Asymptotic Significance (2-sided) | Monte Carlo Sig. (2-sided) | | | Monte Carlo Sig. (1-sided) | | |
| Significance | 99% Confidence Interval | | Significance | 99% Confidence Interval | |
| Lower Bound | Upper Bound | Lower Bound | Upper Bound |
| Pearson Chi-Square | .918a | 2 | .632 | .714b | .703 | .726 |  |  |  |
| Likelihood Ratio | .886 | 2 | .642 | .817b | .807 | .827 |  |  |  |
| Fisher's Exact Test | 1.421 |  |  | .408b | .395 | .420 |  |  |  |
| Linear-by-Linear Association | .842c | 1 | .359 | .478b | .465 | .491 | .246b | .235 | .257 |
| N of Valid Cases | 111 |  |  |  |  |  |  |  |  |
| a. 3 cells (50.0%) have expected count less than 5. The minimum expected count is .72. | | | | | | | | | |

FET= 1.42 P v=0 .40

Relationship between residence of mothers and gestational age was tested by Fisher's Exact test and it show no

Significant difference. Both mothers in rural and urban areas no different in gestational age.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Table (17): relationship between maternal disease and gestational age | | | | | | |
|  | | | GA | | | Total |
| <28 week | 28-32 week | 32-37 week |
| MD | Negative | Count | 1 | 18 | 31 | 50 |
| % | 2.0% | 36.0% | 62.0% | 100.0% |
| DM | Count | 0 | 1 | 4 | 5 |
| % | 0.0% | 20.0% | 80.0% | 100.0% |
| HT | Count | 2 | 6 | 5 | 13 |
| % | 15.4% | 46.2% | 38.5% | 100.0% |
| Asthma | Count | 0 | 0 | 2 | 2 |
| % | 0.0% | 0.0% | 100.0% | 100.0% |
| 0thers | Count | 2 | 7 | 24 | 33 |
| % | 6.1% | 21.2% | 72.7% | 100.0% |
| Multiple disease | Count  % | 0 | 0 | 8  100% | 8 |
|  |  |  |  | 100% |
| Total | | Count | 5 | 32 | 74 | 111 |
| % | 4.5% | 28.8% | 66.7% | 100.0% |

**Chi-Square Tests**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Value | df | Asymptotic Significance (2-sided) | Monte Carlo Sig. (2-sided) | Monte Carlo Sig. (1-sided) |
| Significance | 99% Confidence Interval | Significance | 99% Confidence Interval |
| Lower Bound | Upper Bound |  | Lower Bound | Upper Bound |
| Pearson Chi-Square | 14.590a | 18 | .690 | .533b | .520 | .546 |  |  |  |
| Likelihood Ratio | 16.839 | 18 | .534 | .434b | .421 | .447 |  |  |  |
| Fisher's Exact Test | 19.698 |  |  | .500b | .487 | .513 |  |  |  |
| Linear-by-Linear Association | 1.485c | 1 | .223 | .134b | .125 | .143 | .015b | .012 | .018 |
| N of Valid Cases | 111 |  |  |  |  |  |  |  |  |

|  |
| --- |
| a. 25 cells (83.3%) have expected count less than 5. The minimum expected count is .05. |
|  |
|  |

The relationship between maternal disease and gestational age was tested by fisher's exact test show no significance importance

Table No. 18. The relationship between the gestation age and antenatal care

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | |
|  | | | GA | | | Total |
| <28 week | 28-32 week | 32-37 week |
| ANC | GOOD | Count | 5 | 28 | 66 | 99 |
| % | 5.1% | 28.3% | 66.7% | 100.0% |
| POOR | Count | 0 | 4 | 7 | 11 |
| % | 0.0% | 36.4% | 63.6% | 100.0% |
| 6 | Count | 0 | 0 | 1 | 1 |
| % | 0.0% | 0.0% | 100.0% | 100.0% |
| Total | | Count | 5 | 32 | 74 | 111 |
| % | 4.5% | 28.8% | 66.7% | 100.0% |

|  |  |
| --- | --- |
| **Chi-Square Tests** | |
|  | Value | | df | Asymptotic Significance (2-sided) | Monte Carlo Sig. (2-sided) | Monte Carlo Sig. (1-sided) |
| Significance | 99% Confidence Interval | Significance | 99% Confidence Interval |
| Lower Bound | Upper Bound |  | Lower Bound | Upper Bound |
| Pearson Chi-Square | 1.303a | | 4 | .861 | .830b | .820 | .840 |  |  |  |
| Likelihood Ratio | 2.091 | | 4 | .719 | .734b | .722 | .745 |  |  |  |
| Fisher's Exact Test | 2.360 | |  |  | .893b | .885 | .901 |  |  |  |
| Linear-by-Linear Association | .381c | | 1 | .537 | .618b | .605 | .630 | .384b | .372 | .397 |
| N of Valid Cases | 111 | |  |  |  |  |  |  |  |  |

a. 6 cells (66.7%) have expected count less than 5. The minimum expected count is .05.

The relationship between gestation age and antenatal care was tested by the fishers exact test and it shows no significant difference.

**DISCUSSION**

This study aimed to determine the prevalence of preterm birth and associated factors at the teaching hospital in Nasiriya. Our findings demonstrate that preterm birth is a significant health problem

in this population and that PIH, APH and prolonged PROM are independently associated with PTB. The high rate of preterm birth in this study is in agreement with World Health Organization (WHO) estimates that show that the highest rates are in sub Saharan Africa and South Asia and similar to the finding of other studies in other countries. However, this PTB rate is higher than would be expected for community based on study.

Though our findings showed a marginal negative association between maternal age < 20 years and PTB , . Although about 12% of all mothers were aged < 20 years Delivery via Caesarean Section was significantly associated with preterm birth but onset of labor was not. This was similar to the finding of others studies.

Operative delivery has no causal relationship with preterm birth but rather is as a result of indicated delivery for maternal or fetal reasons occasioned by obstetric complications such as PIH and APH as observed in this study.

UTI in pregnancy was associated with premature birth. This was similar to the findings of studies in Iran and brazil . Due to morphological and functional changes that occur in pregnancy, stasis of urine favors UTI. Like other infections, UTI stimulate production of cytokines which may induce preterm labor through release of prostaglandins

Hypertension increases resistance of uterine vessels and reduce uteroplacental fluid, which in turn causes intrauterine growth restriction. Moreover, the high rate of disorders like placenta abruption and pre-eclampsia and intrauterine growth restriction among women with hypertension may results in surgical operations and preterm birth. the likelihood of preterm birth to be 2.6 times greater among women with chronic hypertension . Various factors including fetal abnormalities, hypertension, pre-eclampsia, blood transfusion between twins, and chronic leakage of ammonite in ruptured areas of the membrane may lead to Oligohydramnios. Some reports have estimated the likelihood of preterm birth to be 3-10 times higher in women with Oligohydramnios .

Maternal hypotension during pregnancy (often defined as blood pressure ≤110/60), may be associated with reduced utero-placental perfusion, prematurity, and low birth weight . Studies characterizing relationships between maternal hypotension and prematurity have reported inconsistent results Treatment of hypertensive pregnantwomen may improve the placental perfusion and fetal outcomes) all preterm Late prematurity was found at high levels in our study and represents two-third of all preterm births in our study . Given current knowledge about the crucial importance of gestational weeks 34 through 36 to the development of the neonate and the risks arising from late preterm birth this should be a focus of public health policy. Immunological and pulmonary maturation occur during that period, and late prematurity therefore increases the risk of respiratory morbidity, longer hospital stays, neonatal ICU admission and death, as well as re-hospitalization, largely because of difficulties with breastfeeding and higher rates of neonatal jaundice and infections.

Adverse effects on cerebral development may underlie the neurological complications described in the short term, such as inability to effectively coordinate the movements necessary for suckling, swallowing, and breathing, and, in the longer term, delayed psychomotor development and lower school performance.

Male premature neonates 75(76%) were more frequently than female premature neonates 36(32%).

The fact that male children are more frequently presented to medical care has been observed other workers . it might be explained that males are generally more precious to the family that they tend to get better care. Moreover, males, during all the stages of their lives are at a higher risk of morbidity and mortality than females due to genetic weakness in the Y chromosome.

The results show that the highest frequency of premature neonates were born to mothers age 20-30 yrs.

The causes of premature neonates were not analysed according to maternal age. Therefore we cannot say that this mean due to prematurity or low birth weight. That mean birth weight generally increase in maternal age.

Incidence of prematurity is much higher age group (20-30 yrs.), this age group represents the period of optimum reproduction and its seems that many more deliveries take place during this period.

Majority of premature neonates were born to housewife mothers 100(90.1%) and 11(9.9%) of the mothers were employer.

Premature neonates born at hospital had higher percentage than that delivered at home. This could be explain by the fact thal all home delieveres are normal ones where as hospital delieveres are operative.

**Conclusions**

Chapter 3

1. Prematurity more with caesarean section due to increase number of caesarean section deliveries

2. Most of cases of prematurity in reproductive period 20-30 yrs. And from urban area.

3. No role for consanguinity or family history of premature labour.

4. Most cases of premature comes from housewife mothers because employer mothers had limited number of pregnancies according to their occupation.

5. Most neonates (64%) were admitted during the first week of life.

6. The majority of the premature neonates (67%) were born at gestational age (33-36 weeks).

7. The majority of the premature neonates delivered at hospital (97%) one case (1.8%) had been delivered at home.

**Recommendations**

1. Encourage hospital deliveries.

2. Good antenatal care to control chronic maternal diseases.

3. Hospital support for nursing care unit by CPABs (continuous positive airway pressure) and ventilators.

4. Well trained medical staff for NCU (neonatal care unit) for caring premature babies.

5. Identifying causes of premature neonate, proper management and preventive measures should be taken in consideration.

6. Preventive measures for infection:

a) The infants, their mother, will be isolated from other patient (premature unit).

b) Encourage breast feeding. this will provide a great deal of protection because the immunoglobulins in the milk will be absorbed by the infants.

7. Continuous training course for midwives.

8. Stress on social media / local media to encourage hospital deliveries.

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