



**Incidence and Causes of Still Births in Al-Thawra General Hospital,
Sana'a, from 1st Jan to 31st Dec 2008-Clinical Study**

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Abstract

This is a retrospective descriptive study done in obstetric unit in Al-Thawra modern general hospital, Sana'a from 1st Jan to 31 Dec 2008 to determine incidence of stillbirths and causes of stillbirth among women who were pregnant 22wk & more admitted for delivery in obstetric unit.

The total number of deliveries was 12069, 345 cases of them were still Born. The incidence of stillbirths was 28.6 per 1000 total birth. The most common cause of stillbirth was idiopathic (unclassified) (132) (38.3%). The second cause was mechanical (54) (15.7%) due to many factors as cord prolapse, malpresentation, abnormal lie, rupture uterus, obstructed labor and malposition. The third cause was congenital anomalies (47) (13.6%). The fourth cause was hypertensive disorders of pregnancy (35) (10.1%). Ante partum haemorrhage was the sixth cause (29) (8.4%). The seventh cause was Rh-isoimmunization (28) (8.1%).

Maternal medical diseases were the eighth cause (10) (2.9%), these including rheumatic heart diseases, pregestational diabetes, malaria, hepatitis and septicemia.

Premature rupture of membranes was noted in 7 cases (2%). The last cause of still birth was found to be post maturity which was found in 3 cases (0.9%).

The incidence of still birth in relation to maternal age was more in 20-29 years and reported in 164 cases (53.7%). Regarding parity the incidence of still birth was more in multiparas 127 cases (41.6%). The incidence of still birth was more in gestational age between 28-36 weeks. The body weight of still born babies were more in 0.9-2.4 kg ,170 cases (49.3%), and least in body weight less than 0,8 kg ,21 cases (6%) . Regarding type of sex among still born, the incidence was more among males and represent 186 cases (53.9%), while incidence in females was 159 cases (46.1%) . Most of deliveries of still birth were by vaginal routes 249 cases (72.1%), while 96 cases (27.9%) by abdominal deliveries.

Introduction and Aim of the study:

Still birth is one of the major problems in our country. A still birth is a child which has issued forth from its mother after 24th week of pregnancy and which did not at any time after becoming completely expelled from its mother breath or show other signs of life.

Incidence of still birth is a wide range throughout the world depending chiefly on the physic and health of people together with density of medical care. It was 11.8 per 1000 total birth in 1979 and 5 per 1000 birth in 2006. This is significantly lower for the first time since 1993.

In our country previous study showed it was 33 per 1000 total birth and causes one of the major health problems in developing countries. The incidence is less in developed countries due to improvement in antenatal care; and intra natal care and especially when CESDI attempts to identify risks which can be attributed to suboptimal clinical care.

There are many causes for still births. Still birth may be due to injuries; illnesses (such as pre-eclampsia), infections, or catastrophic events such as maternal hemorrhage or cardiac arrest of the mother or childbirth defects and growth abnormalities of the fetus also can occur. Uterine factors such as placental detachment, placental abruption, or restricted growth can prove dangerous to the flow. Also, there are two categories causing stillbirth: antepartum fetal death, and death from intrapartum anoxia or trauma. So, the investigations of fetal death involve both the fetus and mother. It is essential that the cause of death can be determined, whenever possible.

The aim of this study is to find out the incidence, causes and associated factors of stills.

Aims of the study:

1. Estimating the rate of still births.
2. Identifying the most common causes of still birth.
- 3-Identifying the rate of some associated factors which may contribute to still birth in our country.
4. Listing the preventive measures and the recommendations that must be taken.

Patients and methods:

Study design: This is a descriptive study from records.

The maternal charts of all women who delivered between 1st Jan 2008 to 31 December 2008 were reviewed and we found 488 patients delivered still birth. The charts were analyzed retrospectively for the following variables: Causes, associated factors, type of sex of still birth, mode of delivery, and birth weight of still births.

About causes: the following were studied:

1-Unexplained still birth

a)Mechanical

b) Congenital anomaly

c)Pre-eclampsia -- eclampsia

d) Antepartum hemorrhage

e)Rh- isoimmunization

2-Premature rupture of membranes

3-Maternal medical disorders

4-Post term

About associated factors: we considered the following:

1-Multiparity

2-Non educated mothers

3-Anemia

4-Absent antenatal care

5-Previous still birth

Investigations performed during the study period include:

a) Hemoglobin level

b) Combs test

Results:**Incidence:**

The total number of deliveries in Al-Thawra Hospital in Sana'a throughout on year "from 01/01/2008 to 31/12/2008" were 12069 deliveries, 345 cases of them were still birth. The still birth rate was 28.58 per 1000 of total births.

Table No. 1 showing the total deliveries in Al-Thawra Hospital in 2008 and their outcomes.

Deliveries Outcome	Alive births	Stillbirth
Numbers	11724	345
Total deliveries	12069	

The Common Causes of Stillbirths were as the following:

1. Unexplained stillbirth (132) (**38.3%**)
2. Mechanical (54) (**15.7%**)
3. Congenital anomalies (947) (**13.6%**)
4. Pre-eclampsia- Eclampsia (35) (**10.1%**)
5. Antepartum hemorrhage (29) (**8.4%**)
6. Rh- isoimmunization (28) (**8.1%**)
7. Maternal medical disorders (10) (**2.9%**)
8. Premature Rupture of membranes (7) (**2%**)
9. Post date (3) (**0.9%**)

Table No.2 showing the most common causes of Stillbirth in Obstetric Unit in Al-Thawra Hospital.

Causes of Stillbirth	Number	%
Unexplained Stillbirth	132	38.35%
Mechanical	54	15.7%
Congenital	47	13.6%
Pre-Eclampsia-Eclampsia	35	10.1%
Antepartum Hemorrhage	29	8.4%
Rh-isoimmunization	28	8.1%
Maternal Medical Disorders	10	2.9%
Premature Rupture of Membranes	7	2%
Post date	3	0.9%
Total	345	100%

Unexplained Stillbirth was the commonest cause of death which was represented by 132 cases (38.3%).

Figure No.1. showing causes of the stillbirth in the obstetric unit in Al-Thawra hospital.

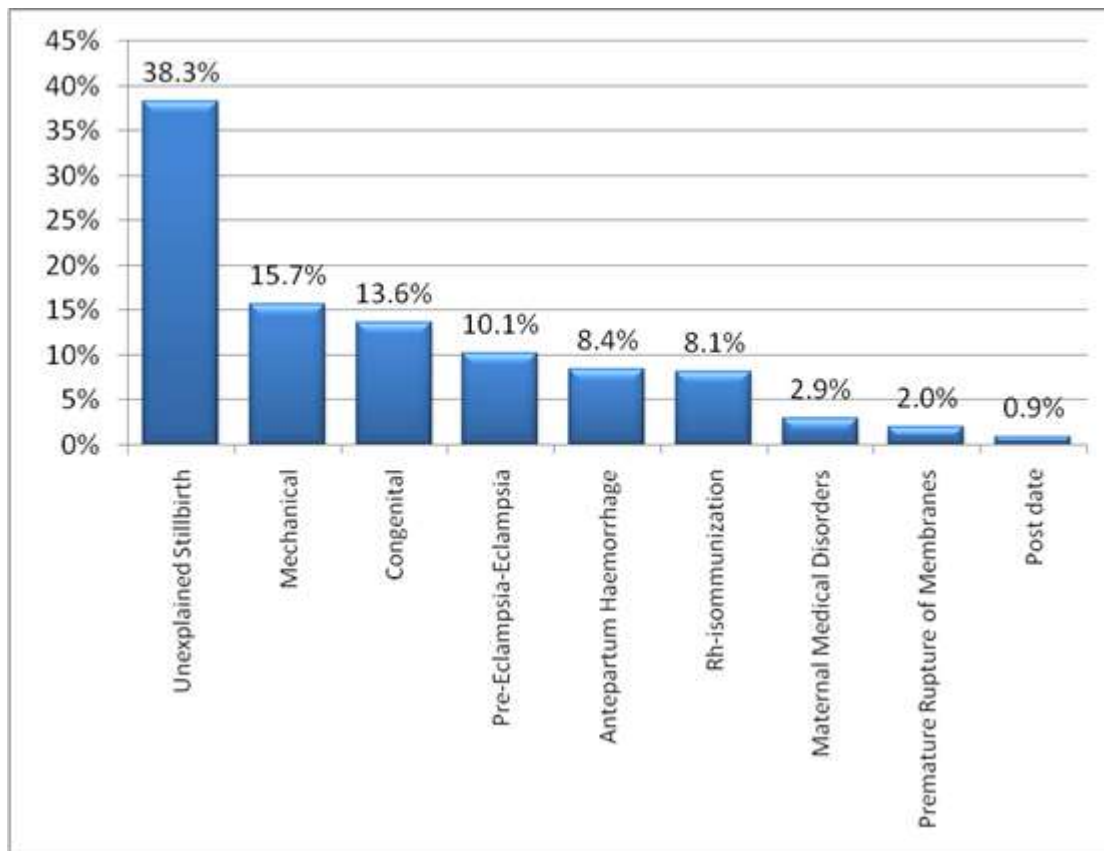
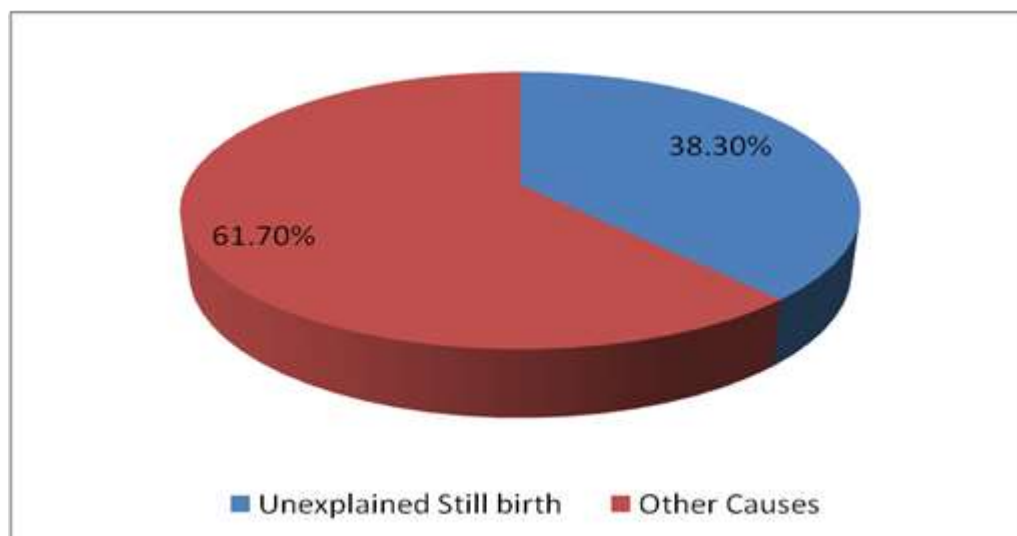


Table No.3 showing the percentage of stillbirth with unexplained cause in the obstetric unit in Al-Thawra hospital.

Causes of Still birth	Number	%
Unexplained Still birth	132	38.3%
Other Causes	213	61.7%
Total	345	100%

Figure No.2 showing the percentage of stillbirth with unexplained cause in the obstetric unit in Al-Thawra hospital.



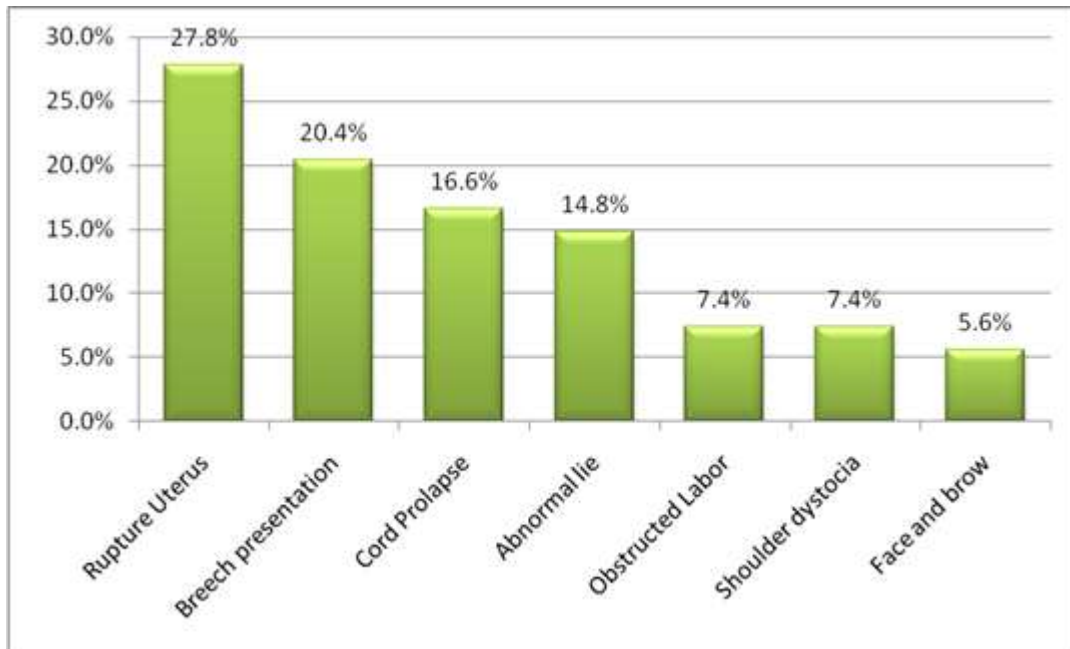
The second Leading Cause of Still birth was Mechanical factors represented by 54 cases (15.7%). Mechanical factors include:

1. Rupture uterus 15 cases (27.8%)
2. Breech presentation (stock head) 11 cases (20.4%)
3. Cord prolapse 9 cases (16.6%)
4. Abnormal lie 8 cases (14.8%)
5. Obstructed labor 4 cases (7.4%)
6. Shoulder dystocia was noticed in 4 cases (7.4%)
7. Abnormal presentation (face and brow were seen in 3 cases (5.6%))

Table No.4 showing Mechanical Causes which lead to still birth in obstetric Unit at Al-Thawra Hospital.

Medical Causes	Number	%
Rupture Uterus	15	27.8%
Breech presentation	11	20.4%
Cord Prolapse	9	16.6%
Abnormal lie	8	14.8%
Obstructed Labor	4	7.4%
Shoulder dystocia	4	7.4%
Face and brow	3	5.6%
Total	54	100%

Figure No.3 Demonstrate the distribution of the mechanical causes of stillbirth in Al-Thawra hospital.

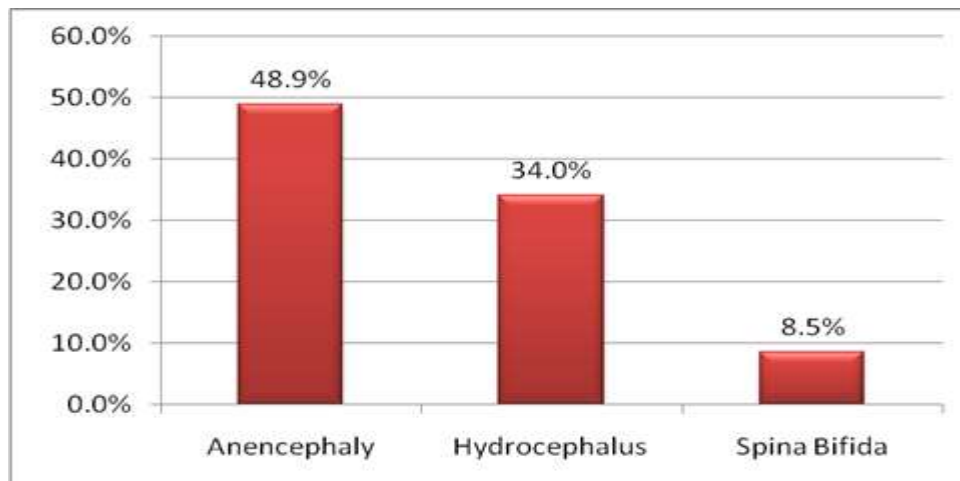


The third causes of stillbirth were congenital anomalies which found in 47 cases of stillbirth (13.6%) and the main identifiable types of congenital anomalies that found was hydrocephalus that seen in 16 cases (4.6%), anencephaly 23 cases (6.7%) and spina bifida in 4 cases (1.6%)

Table No.5 shows the congenital anomalies that cause stillbirth.

Type & Congenital Anomalies	Numbers	%
Anencephaly	23	48.9%
Hydrocephalus	16	34.0%
Spina Bifida	4	8.5%
Total	47	100%

Figure No. 4 showing type of the Congenital Anomalies that cause stillbirth

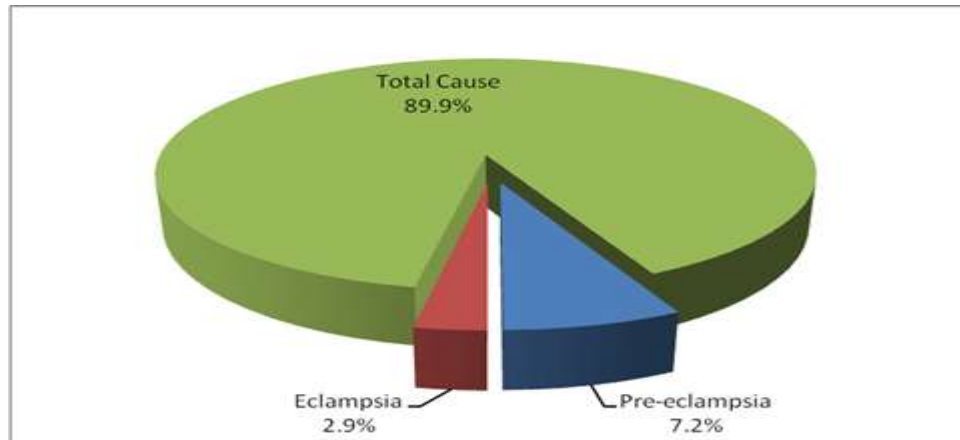


Hypertensive disorders of pregnancy were the forth causes of stillbirth and found in 35 cases (10.1%) of them 25 cases (7.2%) were due to severe pre-eclampsia and 10 cases (2.9%) were due to eclampsia.

Table No.6 Showing Number and Percentage of Fetal deaths attributed to pre-eclampsia- eclampsia

Hypertensive disorders of pregnancy	No	%
Pre-eclampsia	25	7.2%
Eclampsia	10	2.9%
Other Cause	310	89.9%
Total	345	100%

Figure No.5 Showing the distribution of Pre-eclampsia-Eclampsia of the total causes of deaths

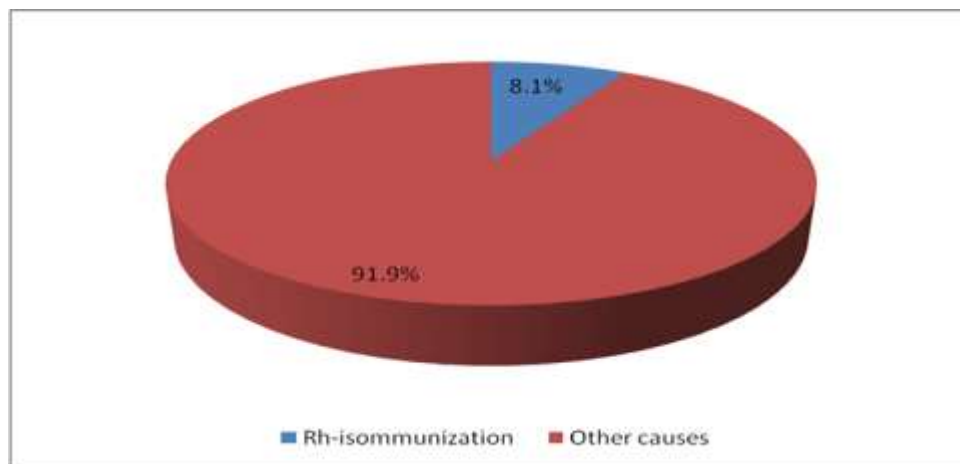


Rh-isoimmunization was found to be the 6th cause in our study, 28 cases (8.1%) were due to Rh-isoimmunization.

Table No. 7 shows the number of stillbirths due to Rh-isoimmunization in the obstetric unit at Al-Thawra General Hospital.

Causes of Still birth	Numbers	%
Rh-isoimmunization	28	8.1%
Other causes	317	91.9%
Total	345	100%

Figure No. (6) Showing Still Birth due to Rh incompatibility

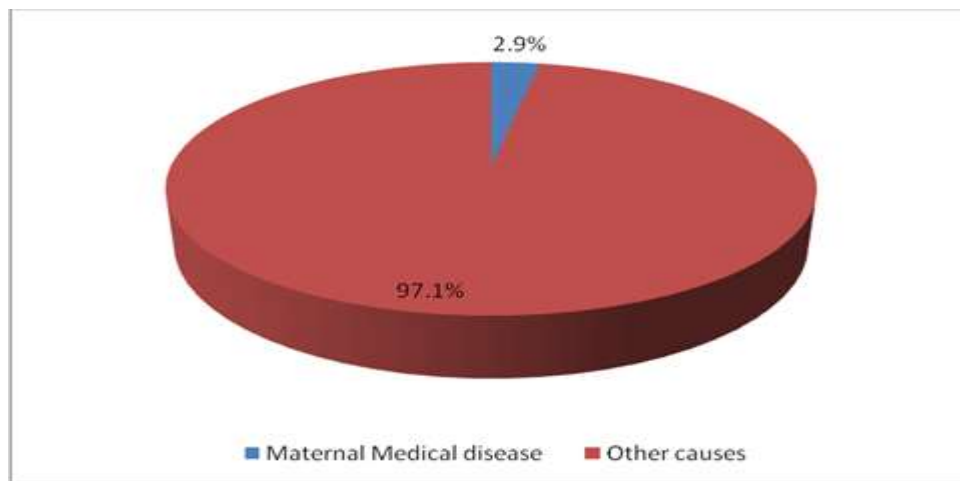


Maternal medical disorders were noticed in 10 cases (2.9%), four of them have diabetes mellitus, three cases with RHD, 1 case has Septicemia, one case Hepatitis and one case has Malaria.

Table No. (8) Shows the number of stillbirths due to maternal medical disease in obstetric unit at Al-Thawra General Hospital.

Causes of Still birth	Numbers	%
Maternal Medical disease	10	2.9%
Other causes	235	97.1%
Total	345	100%

Figure No (7) Shows stillbirth due to maternal medical diseases obstetric unit at Al-Thawra General Hospital

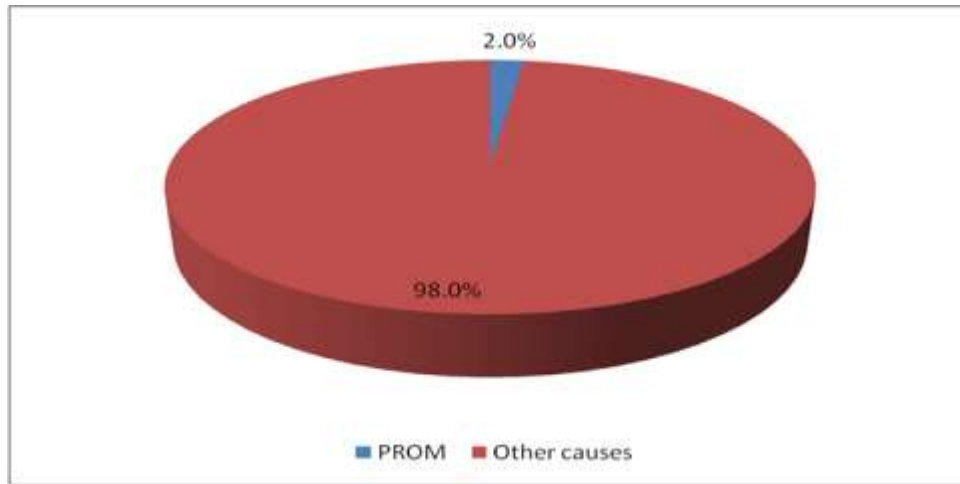


Premature rupture of membranes was noticed in 7 cases (2%)

Table No. (9) Shows the number of still birth due to PROM in obstetric unit of Al-Thawra Hospital

Causes of Still birth	Numbers	%
PROM	7	2%
Other causes	338	98%
Total	345	100%

Figure No. (8) Still birth due to PROM

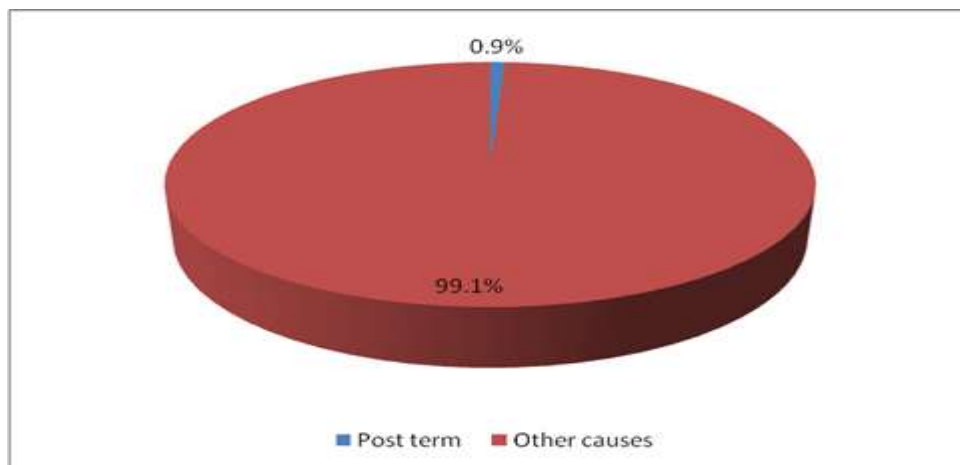


The last leading causes of stillbirth was found to be post maturity which found in 3 cases (0.9%)

Table No. (10) Showing the number of Stillbirth due to post maturity

Causes of Stillbirth	Number	%
Post term	3	0.9%
Other causes	342	99.1%
Total	345	100%

Figure No. (9) Still birth due to post term cause

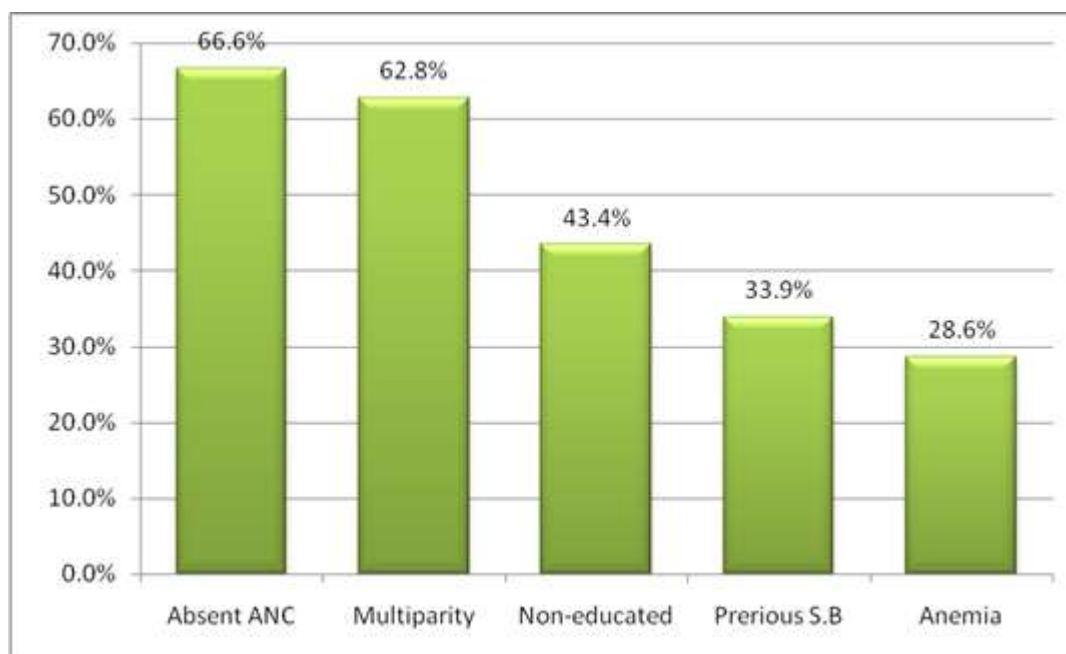


The associated factors which found in this study that increased the

Table No. (11) Showing associated Factors with S.B

Associated Factors	Numbers	%
Absent ANC	230	66.6%
Multiparity	217	62.8%
Non-educated	150	43.4%
Previous S. B	117	33.9%
Anemia	99	28.6%

Figure No. (10) Showing associated factors with S.B

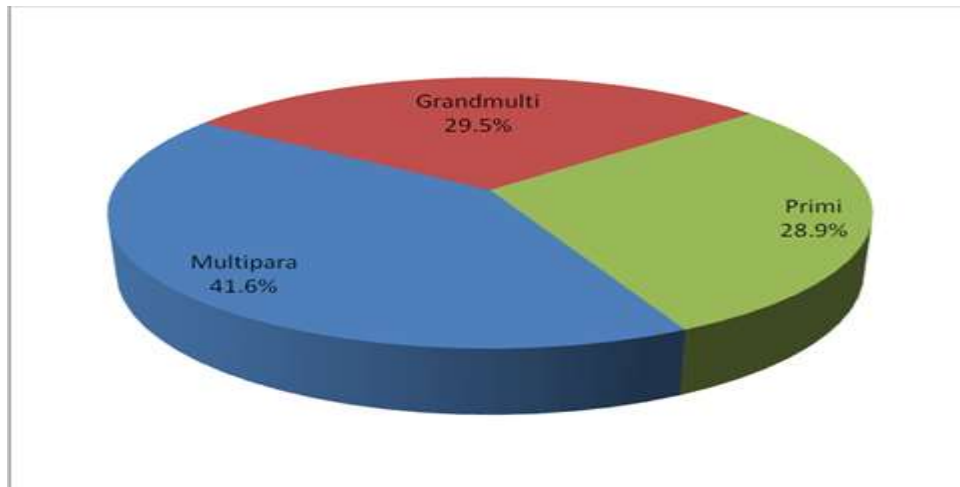


Regarding parity there were 127 cases (**41.6%**) multipara, 90 cases (**29.5%**) grand multi, and 88 cases (**28.9%**) primigravidas.

Table No. (12) Shows the distribution of still birth according to parity

Parity	Number	%
Multipara	127	41.6%
Grand multi	90	29.5%
Primip	88	28.9%
Total	305	100%

Figure No. (11) Shows distribution of parity among women who has S.B in obstetric unit in Al-Thawra Hospital

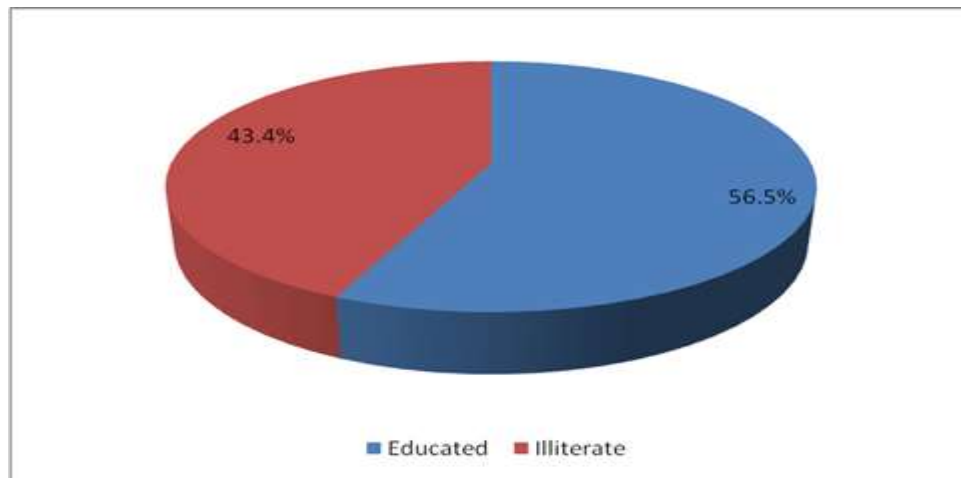


The education level is low, there were 195 cases (56.5%) educated with different level and 150 cases (43.4%) non-educated.

Table No. (13) Shows education level among mother, who had S.B in obstetric unit in Al-Thawra Hospital

Education level	Number	%
Educated	195	56.5%
Illiterate	150	43.4%
Total	345	100%

Figure No. (12) Showing education level among mother, who had S.B in obstetric unit in Al-Thawra Hospital



We noticed in our study the incidence of still birth in relation to maternal age was more in the range 20-29 years and least in mothers of 40 years old or greater.

Mothers less than 20 years old have 36 cases (**11.8%**)

Between 20-29 years, 164 cases (**53.7%**)

Maternal age between 30-39 years old have 95 cases (**31.3%**)

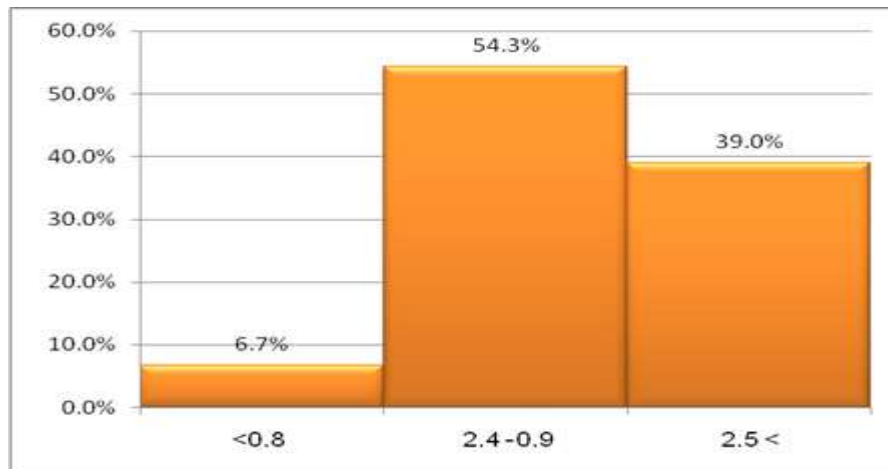
Maternal age equal or greater than 40 years old, have 17 cases (**5.6%**)

Regarding body weights of all S.B, body weight of S.B equal or less than 800 gm found in 21 cases (**6%**), body weight between 900 and 2400gm seen in 170 cases (**49.3%**) and represent the majority of them, The last group were body weight equal or more than 2.5 kg in 122 cases (**35.4%**).

Table No. (14) Shows the body weight of all S.B

Body weight (kg)	Number	%
< 0.8	21	6.7%
0.9- 2.4	170	54.3%
> 2.5	122	39.0%
Total	345	100%

Figure No. (13) shows the body weight of still birth

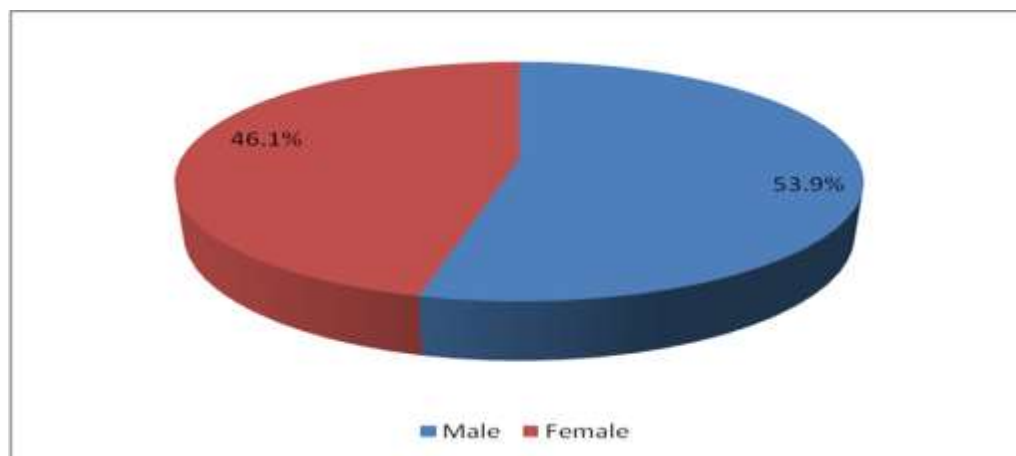


Regarding type of the sex, the incidence of still birth was more among males and found in 186 cases (53.9%) and 159 cases (46.1%) in females.

Table No. (15) Shows types of sex of stillbirth in our study.

Sex	Number	%
Male	186	53.9%
Female	159	46.1%
Total	345	100%

Figure No. (14) Showing type of sex among S.B

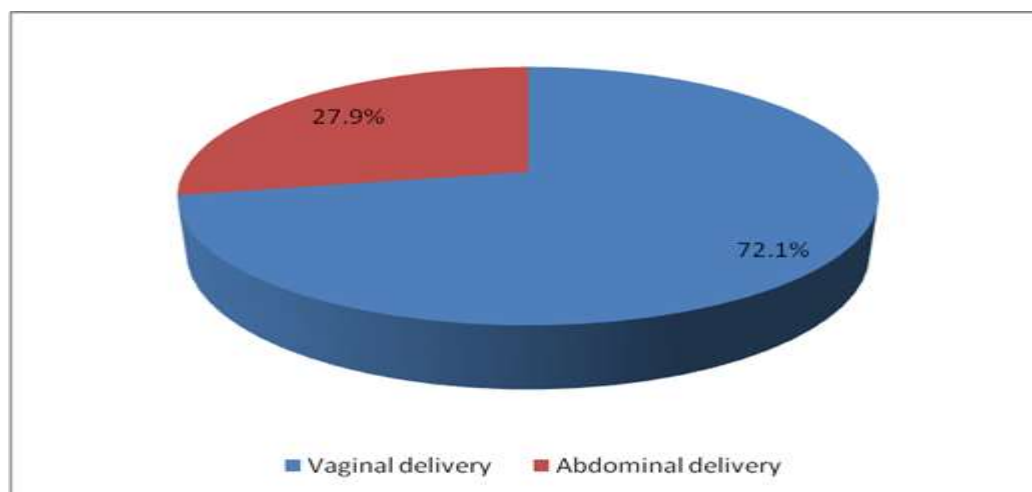


Most of deliveries of Still births were by vaginal routes (249) cases (**72.1%**) while 96 cases (**27.9%**) by abdominal deliveries.

Table No. (16) Shows the mode & delivery of all Still birth

Mode of Delivery	Cases	%
Vaginal delivery	249	72.1%
Abdominal delivery	96	27.9%
Total	345	100%

Figure No (15) Shows that percentage of mode of deliveries of S.B.



Discussion:

Still birth rate is high in this study 28.6 per 1000 total birth if we compare it with developed countries, where still birth rate is 5 per 1000 of total birth, but this incidence is lower than the study that done in obstetric unit in Al-Thawra hospital in 2003 (33 per 1000 total birth), and this high value attributed to poverty, suboptimal care and low educational level.

The most common causes of still births in this study was unexplained or unclassified death in 132 cases (38.3%) and necropsy not done to any case of unexplained death. This rate of unexplained still birth is like the study that done in 2003 (110 cases 34.4%) in obstetric unit of Al-Thawra general Hospital.

The second cause of still birth was mechanical factors 54 cases (15.7%), which is attributed to many causes such as rupture of the uterus 15 cases (27.8%), that represent the highest rate in mechanical factors and is caused by oxytocin abuse and planned home delivery especially of women who had previous scars. 14 cases of them were multigravida and one case primigravida. 5 cases had previous scar, there is increase in the rate of rupture of the uterus in comparison with developed countries. The second cause of mechanical factors was breech presentation with stock head 11 cases (20.4%), all of cases are due to trial of home delivery. 9 cases of them were primigravida. Third cause of mechanical factors was cord prolapse 9 cases (16.6%). Abnormal lie was the fourth cause in mechanical factors 8 cases (14.8%). The fifth cause was obstructed labor 4 cases (7.4%). Shoulder dystocia was noticed in 4 cases (7.4%). Three cases of them delivered vaginally and one case delivered by cesarian section. Face and brow presentations were the last causes of mechanical factors in 3 cases (5.6%).

The third cause of still births was congenital anomalies 47 cases (13.6%) and it is like still births in England, Wales and Northern Ireland by Wigglesworth classification in 1996 (10.1 %). Most of cases had central nervous system anomalies such as anencephaly 23 cases (6.7%), hydrocephalus 16 cases (4.6%) and spina bifida 4 cases (1.6%). Neural tube defects can be decreased in rate by administration of folic acid to both parents pre and post conception. 6 cases of hydrocephalic still births delivered vaginally but one of them was breech presentation with stock head and delivered after puncture of the head transabdominally under ultrasound guidance at our hospital due to bad management and absent antenatal care. 19 cases delivered by C/S.

Hypertensive disorders of pregnancy were the fourth cause of still births 35 cases (10.1 %). 28 cases were preterm due to termination of pregnancy. 20 cases delivered by C/S and 8 cases delivered vaginally after induction. 7 cases presented to emergency room in labor, 18 cases of them only were on antihypertensive drugs and had regular ANC.

The fifth cause of still birth was antepartum hemorrhage 29 cases (8.4%), due to abruptio placenta 20 cases (5.8%), 12 cases of them were associated with pre-eclampsia, 6 cases had no underlying cause and two cases associated with trauma. The second cause of antepartum hemorrhage was placenta previa 9 cases (2.6%), 6 cases of them were multigravida, three cases were primigravida, three cases had previous scar and one case had past history of abortion with dilatation and curettage.

The sixth cause of still birth was Rh-isoimmunization 28 cases (8.1%), with hydrops fetalis. The causes of sensitization were home delivery without administration of antenatal anti-D.

10 cases (2.9%) of S.B were due to maternal medical disorders, four of them associated with D.M with uncontrolled blood sugar and absence of prenatal counseling and A.N.C. Two cases due to R.H.D , one case has septicemia, one case with malaria and one case due to hepatitis B virus.

Premature rupture of membranes was seen in 7 cases (2%), the duration of membrane rupture was more than 24 hours and less than one week. Induction of labor done for 5 cases of them, two cases developed chorioamnionitis and delivered after 24 hours.

Post maturity caused still birth in 3 cases (0.9%), two cases died after 41 weeks of gestational age and one case died intrapartum during induction of labor. All cases had no surveillance of fetal wellbeing after 40 weeks of gestational age.

Regarding associated factors there were 230 women (66.6%) had history of absent A.N.C and most of them are resident in towns where medical services are better than other areas. 217 cases (62.8%) are multiparas .150 cases (43.4%) were non educated. 117 cases had history of previous still birth. 99 cases (28.6%) had anemia due to low socioeconomic state and the wrong believe about administration of ferrous tablets during pregnancy will cause macrosomia of the fetus and difficult delivery. The incidence of still birth is higher with maternal age between 20-29 years (164 cases 53.7%).

Regarding the body weight of most of S.B were underweight (in 191) cases (55.3%). The incidence of still birth in males were 186 cases (53.9%) and females 159 cases (46.1%). Vaginal delivery of SB found in 249 cases (72.1%) compared to abdominal delivery 96 cases (27.9%) .Induction of labor needed in 100 cases (28.9%) while spontaneous labor occurred in 149 cases (43.1%).

Conclusion

The incidence of still birth in this study is 28.6 per 1000 total birth and most of its causes are due to suboptimal care .The incidence can be decreased greatly by availability of antenatal care centers in villages with well trained persons and education of pregnant women about risk factors.

Thanks to increased knowledge and better treatment of maternal conditions, the number of stillbirths occurring every year is rapidly dropping. To help decrease your risk of experiencing a stillbirth even further, here are some steps that you can take:

- **Attend all Prenatal Appointments:** It is important to attend regular prenatal appointments

throughout your pregnancy. During these appointments, your caregiver will check to make sure your baby is developing properly and that your placenta is healthy and of normal size. Regular prenatal appointments can also help to identify any additional health problems early on.

- **Monitor Baby's Movements:** After the 26th week of pregnancy, it is recommended that all pregnant women monitor their baby's movements. Count the number of kicks that your baby makes every day. If your baby is kicking less than ten times a day, or seems to be abnormally quiet, consult your health care provider.
- **Avoid Infection:** Many infections responsible for stillbirth are preventable during pregnancy. Avoid handling cat litter during pregnancy, and don't eat raw or improperly cooked foods. Get tested for STDs, including [chlamydia](#), [gonorrhoea](#), and syphilis, early in pregnancy.
- **Report Pain or Bleeding:** Monitoring of any abnormal bleeding or pains during pregnancy. Report any of these symptoms, no matter how minor, to health care professional.

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