

## To Identify Common Risk Factors Associated with IUFD in Rangpur Medical College Hospital, Rangpur, Bangladesh

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### Abstract

**Introduction:** Intra uterine fetal death is always an unacceptable event not only by the expecting mother and family but also by the obstetrician. Both the woman & the obstetrician become desperate to know the cause of IUFD & its prevention in future pregnancy. In more than 50% cases causes of fetal death cannot be determined. **Objective:** To identify common risk factors associated with IUFD. **Methods:** It was a cross sectional study was conducted in the department of Obstetrics & Gynaecology, Rangpur Medical College Hospital, Rangpur over the period of 6 months dated from July 2017 to December 2017. **Sample size:** 50 cases. All pregnant woman after 28 weeks of gestational age who were admitted in antenatal ward of the Gynae & Obstetric department of Rangpur Medical College Hospital, Rangpur. During the study period all the patients with IUFD & Fetuses who does not show any signs of births were the study population of this study. **Result:** Total 50 patients included in your study. Table-I shows that most of the women with IUFD cases fall in the age group of 20-30years 76% and 72% of women had primary level of education. Most of the patient 70% were from middle class. All were housewife. Majority (88%) were from rural area. Majority 52% were primigravida, 50% were >36weeks of gestational age, history of abortion were in 14% cases & IUFD in 04% cases. None of the patient took regular antenatal care, most of the Patient (72%) took irregular ANC, and 28% of patient did not take any ANC. Hypertensive disorder was the major risk factors 34% which include chr. HTN. 08%, preeclampsia 10% & eclampsia 16%, Other risk factors were PROM 16%, Prolong labor and obstructed labour 12%, GDM 06%, Rupture uterus with previous C/S 10%, Placental factor 08%, Cord prolapse 06%, Severe IUGR 04%, no risk factors found in 04% cases. 72% of the cases had mild anaemia, 60% were normotensive & 40% had high blood pressure, Scar tenderness were found in 20% cases who had H/O C/S. the patient 58% had Hb% 08-10gm/dl, all were Rh+ve mother, PPBS raised in 06% cases. In USG liquor volume normal 20%, mild to moderate oligohydramnios in 44%, moderate to severe oligohydramnios in 20% & severe oligohydramnios in 16% cases. Shows vaginal delivery had occurred in 86% cases. 14% need operative intervention among which 10% laparotomy were due to rupture uterus & 04% LSCS were due to scar tenderness. Maternal outcome in 84% cases were uneventful. Wound infection occurred in 12% cases & Puerperial sepsis occurred in 04% cases. **Conclusions:** PIH, PROM were leading causes of IUFD. Majority of women who had IUFD were emergency admission who had not received adequate antenatal care. A significant proportion of IUFD is preventable by health education to patients and community for regular antenatal care, about warning signs during antenatal period, hospital delivery and early referral.

**Keywords:** Risk Factors, Associated With IUFD, PIH, PROM.

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## INTRODUCTION

The definition of stillbirth recommended by WHO for international comparison is a baby born with no sign of life at or after 28 weeks gestation [1]. According to WHO Intra Uterine Fetal Death (IUFD) is defined as " Death prior to expulsion or extraction of a product of human conception from its mother, irrespective of duration of pregnancy & which is not an induced termination of pregnancy, death indicated by fact that after such separation fetus does not show any evidence of life [1, 2]. Antepartum fetal death contributes to 2/3rd of perinatal mortality [3]. Prevalence of perinatal death in a society is the direct indicator of the quality of antenatal care in the country.3Prevalence of IUFD has been reduced to a minimum unavoidable rate in developed countries. However it still remains very high in under developed & developing countries. Prevalence of IUFD is expressed as number of fetal death per 1000live birth [4]. Common risk factors for intra-uterine fetal death (IUFD) include nonobstetrics &obstetrics causes. Nonobstetrics causes includes socio-demographic data such as maternal age, place of living, occupation, level of education etc. Medical diseases include maternal chronic disease such as DM, HTN, SLE, rheumatic heart diseases. IUFD is more common in adolescents age [5]. Many risk factors for still birth have been identified by studies carried out across different countries specially in developing &underdeveloped countries which include APH, PROM, PIH, DM, congenital anomaly, mismanagement of labour i.e prolong labour, obstructed labour by inefficient health care provider [6]. There are wide variation about risk factors of IUFD & stillbirth in different geographical area & also in strander of management of labour in different population, in different hospitals & in different ethnic variation [7-9]. However pregnancy complication or fetoplacental pathology are the major cause of fetal death. The pregnancy complication commonly associated with IUFD are preeclampsia, antepartum haemorrhage, PROM, chorioamnionitis [10, 11]. Three million stillbirths occur annually worldwide, almost as high as post natal deaths. The developing countries in Asia and sub Saharan Africa together constitute 70% of the world's stillbirth burden [12]. Lack of antenatal care, lack of awereness, less

empowerment of woman, inaccessible or limited health care facility is the major factor responsible for high perinatal deaths in this regions and majority of these are preventable [13].

## MATERIALS AND METHODS

It was a cross sectional study was conducted in the department of Obstetrics & Gynaecology, Rangpur Medical College Hospital, Rangpur over the period of 6 months dated from July 2017 to December 2017.

**Sample size:** 50 cases. All pregnant woman after 28 weeks of gestational age who were admitted in antenatal ward of the Gynae & Obstetric department of Rangpur Medical College Hospital, Rangpur. During the study period all the patients with IUFD & Fetuses who does not show any signs of births were the study population of this study.

### Inclusion criteria

All pregnant woman after 28 weeks of gestation-

1. Admitted for Intrauterine fetal death.
2. Among which fetuses who does not show any sign of birth after delivery.

### Exclusion criteria

1. Pregnancy before 28 weeks of gestation.
2. Congenital anomaly of the baby.
3. Pregnancy with systemic diseases. i.e heart diases, renal failure.
4. History of taking fetotoxic drug.
5. History of trauma ie road traffic accident, fall.

### Procedures of Data Collection

After proper counseling & explanation, taking informed written consent of the study subject & or her legal guardian. Detailed history was taken. Thorough clinical examination was done& available investigations were done in Hospital at free of cost. All the findings were recorded in a preformed data collection sheet.

**Data Analysis:** Data were tabulated and analysed as percentages.

## RESULT

**Table-I: Distribution of sociodemographic profile of study subjects having IUFD (n=50)**

	Frequency	Percentage (%)
<b>Age</b>		
<20yrs-	01	02%
20-25yrs	28	56%
25-30yrs	10	20%
30-35yrs	10	20%
>35yrs	01	02%
<b>Level of education</b>		
Nil	01	02%
Primary	12	24%
SSC	24	48%

	Frequency	Percentage (%)
HSC	11	22%
Graduate	04	08%
<b>Socioeconomic condition</b>		
Below average	15	30%
Lower middle class	13	26%
Middle class	22	44%
Upper class	01	02%
<b>Occupation</b>		
Employed	00	00%
Unemployed	50	100%
<b>Residence</b>		
Urban	06	12%
Rural	44	88%

Table-I shows that most of the women with IUFD cases fall in the age group of 20-30years 76% and 72% of women had primary level of education.

Most of the patient 70% were from middle class. All were housewife. Majority (88%) were from rural area.

**Table-II: Distribution of the obstetrics profile of study subjects (n=50)**

	Frequency	Percentage
<b>Parity</b>		
Primigravida	26	52%
Multigravida	24	48%
<b>Gestational age</b>		
28-32 weeks	15	30%
>32-36 weeks	10	20%
>36 weeks	25	50%
<b>Past obstetrics history</b>		
H/o abortion	07	14%
H/o IUFD	02	04%
<b>ANC</b>		
Regular	00	00%
Irregular	36	72%
None	14	28%

Table-II shows majority 52% were primigravida, 50% were >36 weeks of gestational age, history of abortion were in 14% cases & IUFD in 04%

cases. None of the patient took regular antenatal care, most of the Patient (72%) took irregular ANC, and 28% of patient did not take any ANC.

**Table-III: Distribution of possible risk factors of study subjects (n=50)**

Risk factors	Frequency	Percentage
Maternal Factor	30	78%
Hypertensive disorder-		
Chr HTN	04	08%
Pre-eclampsia	05	10%
Eclampsia	08	16%
PROM	08	16%
GDM	03	06%
Prolong labour & obstructed labour	06	12%
Rupture uterus with previous C/S	05	10%
Placental Factor-		
Abruption placenta	02	04%
Placenta praevia	02	04%
Cord Factor	03	06%
Cord prolapse	03	06%
Fetal Factor	02	04%
Severe IUGR	02	04%
Unexplained	02	04%

Table-III shows Hypertensive disorder was the major risk factors 34% which include chr. HTN. 08%, preeclampsia 10% & eclampsia 16%, Other risk factors were PROM 16%, Prolong labor and obstructed labour

12%, GDM 06%, Rupture uterus with previous C/S 10%, Placental factor 08%, Cord prolapse 06%, Severe IUGR 04%, no risk factors found in 04% cases.

**Table-IV: Distribution of clinical presentation of the study subjects (n=50)**

	Frequency	Percentage
<b>Anaemia</b>		
Mild	36	72%
Moderate	03	06%
Severe	00	00%
Absent	11	22%
<b>BP Systolic</b>		
<140 mm of Hg	30	60%
>140 mm of Hg	20	40%
<b>Diastolic</b>		
<90 mm of Hg	30	60%
>90 mm of Hg	20	40%
<b>Scar Tenderness out of 10 previous C/S cases-</b>		
Absent	08	80%
Present	02	20%

Table- IV shows 72% of the cases had mild anaemia, 60% were normotensive & 40% had high

blood pressure, Scar tenderness were found in 20% cases who had H/O C/S.

**Table-V: Distribution of investigation profile of study subjects (n=50)**

	Frequency	Percentage
<b>Hb%(gm/dl)</b>		
>10	11	22%
8-10	36	72%
<8-7	03	06%
<7	00	00%
<b>Blood group</b>		
(+ve)	50	100%
(-ve)	00	00%
<b>Post Prandial Blood Sugar(mg/dl)</b>		
<7.8	47	94%
>7.8	03	06%
<b>USG Liquor volume</b>		
Normal	10	20%
Mild to moderate oligo.	22	44%
Moderate to Severe oligo.	10	20%
Severe oligo.	08	16%

Table-V shows most of the patient 58% had Hb% 08-10gm/dl, all were Rh+ve mother, PPBS raised in 06% cases. In USG liquor volume normal 20%, mild

to moderate oligohydramnios in 44%, moderate to severe oligohydramnios in 20% & severe oligohydramnios in 16% cases.

**Table-VI: Distribution of mode of delivery of study subjects (n=50)**

	Frequency	Percentages (%)
Vaginal	43	86%
Operative	07	14%
Lower uterine caesarean section	02	04%
Laparotomy	05	10%

Table-VI Shows vaginal delivery had occurred in 86% cases. 14% need operative intervention among

which 10% laparotomy were due to rupture uterus & 04% LSCS were due to scar tenderness.

**Table-VII: Distribution of maternal outcome of study subjects (n=50)**

	Frequency	Percentage
Uneventful	42	84%
Eventful	08	16%
Wound infection	06	12%
Puerperial Sepsis	02	04%

Table-VII shows Maternal outcome in 84% cases were uneventful. Wound infection occurred in 12% cases & Puerperial sepsis occurred in 04% cases.

## DISCUSSION

Antepartum fetal death contributes to 2/3<sup>rd</sup> of perinatal mortality [3]. Prevalence of perinatal death in a society is the direct indicator of the quality of antenatal care in the country [4]. The present study was conducted to identify the common risk factors of IUID and Stillbirth in Rangpur Medical College Hospital Rangpur, a tertiary centre where a large number of patients particularly from remote area seek admission for better management. The duration of study was 6 months started from July 2017 to December 2017. During the study period 2734 antenatal cases were admitted in this institute with different obstetric problems. Total IUID were 85 among them 50 cases were taken for the study purpose after fulfilling the inclusion & exclusion criteria. Regarding the age of the women (shown in table-I) out of 50 study subjects majority (about 56%) were found between the age group of 20-25 yrs, 20% were between the age 25-30 years & 20% were between the ages 30-35 years, 02% above the age 35 years and 02% below the age of 20 years. This result consistent with the study of Shyam P where majority of the patients were in between 21-25 yrs (53%) [14]. In this study majority (72%) of patients had primary level of education. All were (Table-I) unemployed. As Bangladesh is a conservative country, most of the female got married before 20 years having less educational qualification with no employment. Regarding socio-economic condition majority (70%) of patients were from middle class family. Majority of the patients (88%) were from rural area. Another study by Sharma S *et al.*, showed that 58% patients were from rural areas. About 28.4% were from middle-income group [15].

Regarding parity in this study (shown in table-II), majority 52% were primigravida and 48% were multigravida. This result consistent with Shyam P. [14] From this study we found that the gestational age of 50% patients were >36 weeks. 30% were between the gestational age 28-32 weeks & 20% were between 32-36 weeks. Another study by Shyam P *et al.*, showed gestational age of 41.11% patients were between 37-40 weeks, 8.51% were >40 weeks. 24.44% were between 28-34 weeks [14]. Regarding past obstetrics history in this study 14% had a past history of abortion and 04% had history of IUID. In a study by Patel S *et al.*, showed 16.2% had history of abortion and 11.2% had IUID [16]. In the present study out of 50 study subjects

none of them took regular antenatal checkup. 28% took no antenatal check up. Majority 72% took irregular ANC. Another study by Safarzadeh A *et al.*, showed Only 13.87% had had antenatal care and majority 86.1% had no documented evidence of antenatal care in any medical facility [17]. In the present study the most commonest risk factors of IUID (Table-III) was Hypertensive disorder in pregnancy which include 38% among which 22% were preeclampsia and 16% were eclampsia. Another study by Patel S *et al.*, showed IUID occurred in 33.7% cases of PIH and eclampsia [16]. In this study other common risk factors of IUID were PROM 16%, In other study by V S Prasanna kumar Reddy *et al.*, found severe oligohydramnios as a risk factors of IUID in 19.5% cases [18]. In this study GDM was associated with 6% cases. In a study by Anjali C *et al.*, reported diabetes causes IUID in 4.2% [19]. In this study prolong labour and obstructed labour were associated with 12% cases of IUID. In other study by Sharma S *et al.*, showed 4.8% had prolong labour and 3.6% had obstructed labour [15]. In this study ruptured uterus with previous scar were associated with 10% cases and laparotomy had done. Short interval since the caesarean birth, late admission to labour rooms, or late arrival from distant areas are the cases in which rupture uterus causes fetal death. In other study by Sharma S *et al.*, showed 6.4% had ruptured uterus and laparotomy had done [15]. In this study APH causes IUID in 08% cases among which 04% were abruption placentae & 04% were placenta previa, In a study by Sharma S *et al.* showed 18.8% had APH out of which 15.6% had abruption placentae and 3.2% had placenta previa [15].

In this study cord prolapse associated with 06% cases of IUID, in the study by Patel S *et al.*, cord accidents accounted for 2.5% which were emergency admission presented with prolapsed cord [16]. In the present study severe IUGR was found to be responsible for 04% cases of IUID. In the other study by Anjali C *et al.*, showed severe IUGR had 8.5% cases [19]. In this study no risk factors were found in 04% cases. In a study of V S Prasanna kumar Reddy *et al.*, showed that in 19.51% women no risk factors was identified and the cause remained unexplained [18]. Regarding clinical presentation (shown in table-IV) 72% cases were mildly anaemic. 06% were moderately anaemic and anaemia absent in 22% cases. In the study of Shyam P *et al.*, [14] they showed severe anaemia were the risk factors of IUID in 3.33% cases. Regarding Blood pressure in this study 60% were normotensive and 40% had raised BP. Scar tenderness present in 02 cases out of 10 cases with previous H/O C/S. Table V shown investigation

profile of study subject. Hb% in 22% cases were 10 or more gm/dl, 72% cases were 8-10 gm/dl, <8-7gm/dl were 06%. Regarding blood group all cases had (+ve) blood group. Regarding postprandial blood sugar level 94% cases had normal level & 06% cases were raised. Table-VI shown mode of delivery. Among 50 study subject vaginal delivery occurred in 43 (86%) cases, in 14% cases need surgical intervention among which laparotomy due to rupture uterus 05 (10%) and caesarean section had done in 02 (04%) cases due to scar tenderness. In a study of Patel S *et al.*, showed vaginal delivery occurred in 91.2% cases and 8.7% required surgical intervention [16]. Regarding maternal outcome (shown in table-VII) in this study uneventful in 84% cases. Wound infection had occurred in 6(12%) cases out of 07 operative cases, puerperial sepsis had found in 02 (4%) cases. No maternal mortality had found. Another study by S A J Habib *et al.*, also had not found any maternal mortality [20].

#### Limitation of the study

- This study was not a population based study rather it was a hospital based study. So, it does not reflect the actual situation in total population in the country.
- It was a short time study (6 month study) so, sample size may be inadequate to nullify the errors of the study.

The limited number of hospital beds remains always overloaded with different emergency patient. So, a good number of patients had to be discharge after the subsidence of emergency. Many of the patient left hospital before due date by giving risk bonds due to inability to maintain that cost. So, there was inadequate post operative follow up & outcome measurement was inadequate to some extent.

#### CONCLUSIONS

PIH, PROM were leading causes of IUFD. Majority of women who had IUFD were emergency admission who had not received adequate antenatal care. A significant proportion of IUFD is preventable by health education to patients and community for regular antenatal care, about warning signs during antenatal period, hospital delivery and early referral.

#### RECOMMENDATIONS

Socio-demographic factors also need to be considered as predisposing factor for IUFD & stillbirth as many people live in rural areas, illiteracy, early marriages, teenage pregnancies, unregulated reproduction, low socio-economic states, poor nutrition, lack of health education and antenatal care all conspire against the women's health and predispose her to IUFD & stillbirth. Last but not least by improving the women status by educating them, women empowerment, gender equality & improving the nutritional status majority of fetal wastage can be prevented.

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