

# A Neglected Tragedy; Stillbirth

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## Abstract

*An estimated 2.6 million stillbirths occur annually. The vast majority of stillbirths, 84 per cent, occur in low and lower middle-income countries. Despite the large number of stillbirths worldwide, the topic of stillbirths in developing countries has received very little research, programmatic or policy attention.*

*The loss of a wanted baby at any gestation is distressing, not only to the expectant parents but also to their relatives and the attending obstetrician.*

*Every New-born Action Plan (ENAP) 2014 Global target was:*

*10 or fewer stillbirths per 1000 total births in all countries by 2030 and*

*8 or fewer stillbirths per 1000 total births in all countries by as global average and call to action to end preventable stillbirths 2030. To end the preventable stillborn or to achieve the aim of ENAP within 2030, 90% mothers need to receive 4 or more antenatal care by 2025, respectful maternal care during intrapartum with close monitoring and referral facilities for emergency obstetric care & newborn resuscitation need to be ensured. Institutional deliveries need to be increased and at least PNC for 80% women within 2 days of delivery should be ensured. Optimizing nutrition, screening infections and controlling preeclampsia, GDM, and obesity should be the priority. We must work all together to eliminate this tragedy of stillbirth.*

*Search Web MED, Cochrane database, UpToDate, Pub Med, WHO.*

**Key Words:** Stillbirth, ANC, PNC, EOC, ENAP.

## Introduction:

A stillbirth is known as a baby born with no signs of life at 28 weeks of pregnancy or more evident by the absence of breathing, heartbeats, pulsation of the umbilical cord, or definite movements of voluntary muscles.<sup>1</sup>

For many people, the loss of a baby leaves them feeling shocked, isolated and empty. Some make memory boxes; some make baby quotes and some also make clay emblems, which is shown in figure 1.

Over 40 per cent of all stillbirths occur during labour – a loss that could be avoided with improved quality and respectful care during childbirth including routine monitoring and timely access to emergency obstetric care when required.

Beyond the loss of life, the psychological and financial costs for women, families and societies are severe and long lasting. For many of these mothers, it simply didn't have to be this way.

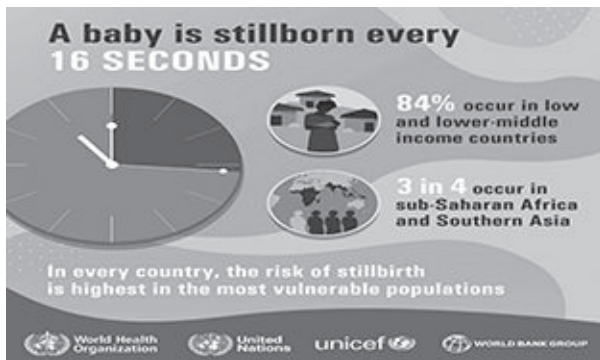


Fig.-1: Memory of stillbirth

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One stillbirth occurs in every 16 seconds, according to first ever UN Joint News Release Geneva, Switzerland on 8th October 2020. (Figure 2)

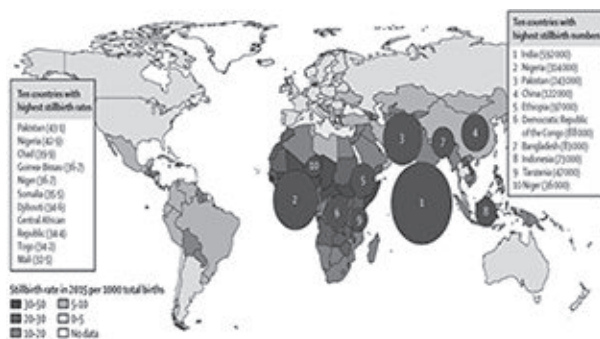


**Fig.-2: Incidence and Prevalence of stillbirth worldwide**

Despite advances in medical science, diagnostic and therapeutic modalities, pregnancy wastage occurs, at an unacceptably high rate. Unfortunately, stillbirth rates remain high, especially in low and middle-income countries, where rates are 25 per 1000, ten-fold higher than in high-income countries. The United Nations' Every New-born Action Plan (ENAP) has set a goal of 12 stillbirths per 1000 births by 2030 for all countries.

Worldwide in 2019, there were an estimated 2.0 million stillbirths that occurred after 28 weeks of pregnancy (about 1 for every 72 births).<sup>2</sup>

Among them, 10 countries are notified for their highest rate of stillbirth and 10 others are notified for highest numbers. These countries are mostly from Asia and Africa, which are shown in figure 3.



**Fig.-3: Distribution of cases of stillbirth in Asian and African countries**

Better access to appropriate obstetric care, especially during labour, should reduce stillbirth rates dramatically even in developing country. Almost half

of stillbirths happen when the women in labour. Dr. Tedros Adhanom Ghebreyesus, WHO Director-General said, “The tragedy of stillbirth shows how vital it is to reinforce and maintain essential health services, and how critical it is to increase investment in nurses and midwives.”<sup>3</sup>

The purpose of this document is to review and update the current information on stillbirth, including definitions, the evaluation of a stillbirth, strategies for prevention and management.

**Definition**

A stillbirth is defined as a baby is born with no signs of life at 28 weeks of pregnancy or more according to WHO.<sup>4</sup> (Figure 4)



**Fig.-4: A stillbirth baby**

**Risk factors**

Maternal factors:

Stillbirth occurs in families of all races, ethnicities, and income levels, and to women of all ages. However, stillbirth occurs more commonly among certain groups of people including women who are of black race, in advanced maternal age (35 years of age or older), nullipara, adolescent or single mother, obese, from low socioeconomic status, malnourished, smoke cigarettes during pregnancy, have certain medical conditions, such as, acquired and inherited thrombophilia, antiphospholipid syndrome, chronic hypertension, diabetes, have multiple pregnancies such as triplets or quadruplet, pregnancy from ART, late term and post term pregnancies and have had a previous pregnancy loss.

**Foetal factors:**

Male foetal sex is more vulnerable. Congenital anomalies can also ended up in stillbirth.<sup>5,6</sup>

## Causes

Causes may be unexplained even after a thorough evaluation<sup>7</sup>

An unexplained stillbirth is a foetal death that cannot be attributed to an identifiable foetal, placental, maternal, or obstetric aetiology due to lack of sufficient information or because the cause cannot be determined at the current level of diagnostic ability.<sup>8</sup>

Foetal causes include Genetic and chromosomal abnormalities, most common abnormalities are trisomy 21 (31%), monosomy X (22%), trisomy 18 (22%), and trisomy 13 (8%)<sup>9</sup> Foetal infections are associated with approximately 10–20% of stillbirths in developed countries and a greater percentage in developing countries.<sup>10</sup> Viral infections associated with stillbirth include cytomegalovirus, parvovirus, and Zika. Serology for toxoplasmosis, rubella, cytomegalovirus, and herpes simplex virus are not included because they are of unproven benefit and not recommended.<sup>11</sup> Foetal growth restriction and foetal asphyxia and trauma are also important causes.

Maternal age at either end of the reproductive age spectrum (less than 15 years and greater than 35 years) is an independent risk factor for stillbirth. Maternal age greater than or equal to 35 years of age is associated with an increased risk of stillbirth in nulliparous and multiparous women.<sup>12</sup>

Rh incompatibility and multiple gestations have higher risk. The stillbirth rate among twin pregnancies is approximately 2.5 times higher than that of singletons (14.07 versus 5.65 per 1,000 live births and stillbirths).<sup>13</sup> The risk of stillbirth increases in all twins with advancing gestational age, and it is significantly greater in monozygotic as compared with dizygotic twins.<sup>14</sup> Past bad obstetric history as women with a previous stillbirth are at increased risk of recurrence. Compared with women with no history of stillbirth, women who had a stillbirth in an index pregnancy had an increased risk in subsequent pregnancies (pooled odds ratio, 4.83; 95% CI, 3.77–6.18), which remained significant after adjustment for confounding factors.<sup>15</sup>

Many maternal medical conditions are associated with an increased risk of stillbirth. Hypertension and diabetes are two of the most common comorbid pregnancy conditions.<sup>16</sup>

There are also some placental causes as placental thrombosis and placental abruption. Placental abruption is identified as the cause of stillbirth in 5–10% of cases.<sup>17</sup> Maternal cocaine and other illicit drug use and smoking tobacco, are all significant contributors to abruption and stillbirth.<sup>18-21</sup>

Cord accidents and fetomaternal hemorrhage may cause stillbirth.

## Classification

Stillbirth is classified as either early, late, or term.

An early stillbirth is a foetal death occurring between 20 and 27 completed weeks of pregnancy.

A late stillbirth occurs between 28 and 36 completed pregnancy weeks.

A term stillbirth occurs between 37 or more completed pregnancy weeks.

## Clinical Evaluation

Detailed history taking is very important. Usually patients come with complaints of loss of fetal movement, slight per vaginal bleeding, pain abdomen, regression of signs and symptoms of pregnancy.

Medical and obstetric history, including exposures (eg, medications and viral infections), a family history with a three-generation pedigree including stillborn infants should be reviewed. Any history of recurrent pregnancy losses and the presence of live born individuals with developmental delay or structural anomalies may be clues to single-gene disorders. Consanguinity should be identified because of the increased possibility of severe autosomal recessive disorders. Smoking, recreational drugs use, stress and use of anticonvulsants are enquired.

On general examination- some signs of clues like high blood pressure, anemia, and fever may be evident.

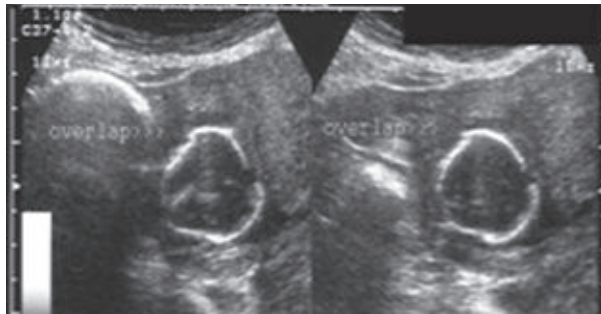
Per abdomen examination: Absence of uterine tone, less uterine height than the period of gestation, no fetal movement is felt, liquor volume is diminished, egg shell crackling feeling of fetal head, no fetal heartbeat is audible.

## Investigations

Investigation is to assess maternal wellbeing and ensure prompt management of any potentially life-threatening maternal disease such as septicemia/DIC. This includes a detailed history of events during pregnancy and clinical examination for pre-

eclampsia, thrombophilia, chorioamnionitis, diabetes and placental abruption.

USG- Shows no fetal movement and absent fetal heart rate. Spalding signs may present if death is more than 7 days passed. (Figure 5)



**Fig.-5:** Sonographic findings of a case of IUFD

There is also a moderate risk of maternal disseminated intravascular coagulation (DIC). 10% within 4 weeks after the date of late stillbirth, rising to 30% thereafter. This can be tested by clotting studies, blood platelet count and fibrinogen measurement. Tests should be repeated twice weekly in women who choose expectant management. Otherwise usually women are suggested for OGTT, antibody screen serologic test for syphilis, screen for fetal-maternal hemorrhage- kleihauer-betke, urine toxicology screen, Parvovirus serology, Lupus anticoagulant screen, anticardiolipin antibodies, factor V Leiden mutation, screen for protein C, protein S, and antithrombin III deficiency, vaginal swab for chlamydial, perinatal autopsy, placental evaluation, karyotype etc.

### Complications from Stillbirth

Various complication may arise as infection, chorioamnionitis, PPH, retained placenta, uterine rupture, DIC, ppsychological upset, ppuerperal sepsis, ppostpartum blue etc.

### Management

The gestational age by last menstrual period, maternal examinations, laboratory data, and ultrasound examination should be recorded for optimum treatment. Possible non-genetic causes, such as infection, placental abruption, and umbilical cord abnormality should be considered or reviewed.

### Preventive measures

Since complications associated with delivery are one of the main causes

of stillbirth, the presence of a skilled birth attendant is often critical. In comparing stillbirth rates to measures of obstetric care, intrapartum stillbirth rates were correlated more closely with obstetric care measures, especially caesarean-section rates, than were antepartum stillbirth rates. It highlights that intrapartum stillbirth is more closely related to medical care availability. Antepartum foetal testing needs to be done 1 to 2 weeks prior to the gestational age of the previous stillbirth and by 32 to 34 weeks of gestation.

Since preeclampsia/eclampsia is another important cause of stillbirth, timely delivery, and availability of caesarean section, can reduce stillbirth associated with both of these and many other conditions. Specific strategies that have been evaluated to reduce stillbirth in developing countries include reduction of infection, correction o anaemia and improvement in maternal nutritional status. Trials to reduce infection have had varying levels of success in reducing stillbirth.

Addressing the causes of stillbirth, reducing intrapartum stillbirth in particular is critical to reducing stillbirth rates. Improved access to quality essential emergency services, in particular to timely and appropriate caesarean section, has been suggested as a strategy to decrease intrapartum stillbirth rates, referral facilities, as well as improved quality of facility-based care.

Community birth attendants (CBA) to provide basic care, recognize the need for referral and to stabilize high risk women prior to referral has been highlighted in interim solution.

Neonatal resuscitation as an effective practice to reduce stillbirth. An effective referral system for complicated deliveries, in conjunction with training, may be the most promising approach.

Better treatment of medical conditions such as diabetes and various forms of hypertension have resulted in significant reductions in stillbirths in developed countries and it is likely effective treatment of these and other medical causes of stillbirth, similar results will be achieved in developing countries.

Finally, access to appropriate essential obstetric care and reduction of infection are interventions most likely to significantly reduce global stillbirth rates.

Potential distal factors include lack of education of women, low socioeconomic status, and the inability to make timely decisions about seeking care.

Intermediate factors related to stillbirth may include advanced or young maternal age, lack of awareness about danger signs, delay in moving to a hospital, non-availability of community resources, and poor maternal nutritional status. Finally, maternal and fetal medical conditions and the poor response of the health care system to these conditions act as proximal risk factors for stillbirth.

The every new born action plan (ENAP) to end preventable deaths has a set stillbirth target of 12 per 1000 births or less by 2030. Global ARR (Annual reduction rate) needs to more than double the present ARR of 2% to accomplish this target for reduction in stillbirth.

In Figure 6, some steps are shown to prevent stillbirth.



**Fig.-6:** Steps to prevent stillbirth

### Methods of Delivery

Fetal death *in utero* does not present an immediate health risk to the pregnant woman, and labor will usually begin spontaneously after two weeks, so the pregnant woman may choose to wait and bear the fetus vaginally. After two weeks, the pregnant woman is at risk of developing blood clotting problems, and labor induction is recommended at this point. In many cases, the pregnant woman will find the idea of carrying the dead fetus traumatizing and will elect to have labor induced.

The method and timing of delivery after a stillbirth depend on the gestational age at which the death occurred, maternal obstetric history (eg, previous hysterotomy), associated medical condition, previous intrapartum history and maternal preference.

### Options are Expectant

#### Active Intervention

#### Expectant management—

Women with intact membranes and no laboratory evidence of DIC should be advised that they are unlikely to come to physical harm if they delay labour for a short period, but they may develop severe medical complications and suffer greater anxiety with prolonged intervals.<sup>22</sup>

Women who delay labour for periods longer than 48 hours should be advised to have testing for DIC twice weekly. Also, NICE suggests that if the woman appears to be physically well, her membranes are intact and there is no evidence of infection or bleeding, she should be offered a choice of immediate induction of labour or expectant management.<sup>23</sup>

**Active intervention—**Women should be strongly advised to take immediate steps towards delivery if there is sepsis, preeclampsia, placental abruption or membrane rupture.

Vaginal birth is the recommended mode of delivery for most women, but caesarean birth will need to be considered with some. Vaginal birth can be achieved within 24-48 hours of induction of labour for IUFD in about 90% of women. Vaginal birth carries the potential advantages of immediate recovery and quicker return to home. Caesarean delivery is advised if there are-

Placenta praevia ( major degree)

Obstructed labour and

Previous two or more history of caesarean sections

Induction of labour

Early in the second trimester, are at high risk of requiring a dilation and curettage for removal of the placenta after delivery of the foetus.

Appropriate methods for labour induction vary, based on gestational age at the time of foetal demise.

Before 28 weeks of gestation, vaginal misoprostol appears to be the most efficient method of induction, regardless of cervical Bishop score,<sup>24</sup> although high-dose oxytocin infusion also is an acceptable choice.<sup>25</sup> A meta-analysis of 14 randomized controlled trials that evaluated methods of induction for second and third trimester stillbirth demonstrated that both vaginal

and oral misoprostol regimens were 100% effective in achieving uterine evacuation within 48 hours.<sup>26</sup> Below 26 weeks misoprostol 100 mg every 6 hourly (Max 4 doses) is effective. After 27 weeks 25-50 microgm every 4 hourly (Max 6 doses) should be given. Mifepristone (either 200 or 600 mg orally) can be used as an adjunct to misoprostol for induction of labor in the setting of stillbirth and reduces the time to delivery when compared with misoprostol alone. However, it does not appear to increase overall efficacy of induction.<sup>27-30</sup> When available, mifepristone can be administered 24–48 hours before initiation of induction with misoprostol. In patients after 28 weeks of gestation with a previous hysterotomy, cervical ripening with a transcervical Foley's catheter has been associated with less uterine rupture rates comparable to spontaneous labor.<sup>31</sup> This may be a helpful adjunct in patients with an unfavorable cervical examination. Therefore, based on limited data in patients with one previous low transverse cesarean delivery, trial of labor remains a favorable option. ARM should not be done. Blood must be kept ready. Good analgesic is important. Prophylactic Antibiotics need to be administered according to national protocol.<sup>32</sup>

#### Care at puerperium

Tender loving care is most important.

Women should wear breast support; they need to be kept in non-postnatal ward or in cabin. They need bereavement counselor and advise for contraceptives. Advocacy for pre-pregnancy counseling is needed. She should attend ANC as soon as get next pregnancy.

2018 Cochrane review found insufficient evidence to inform clinical practice regarding effective interventions to improve care for women with a history of stillbirth.<sup>33</sup>

A stillbirth can result in the feeling of guilt or grief in the mother. Caregivers must be alert to the fact that mothers, husband and children are all at risk of prolonged severe psychological reactions including post-traumatic stress disorder but that their reactions might be very different. Counselling should be offered to all women and their partners to overcome this and for future pregnancy also.<sup>34</sup>

Nevertheless, our strong commitment, dedication may play a vast role in reducing the incidence of Stillbirth.

Ideally all hospital should have facility of:

Registration and evaluation of stillbirths and neonatal death.

A bereavement service for patients with stillbirth

Sending all placentae for detailed histological evaluation after a stillbirth (No need for consent)

Proper counselling and consent taking to improve consenting parents for foetal autopsy.

Review of each patient with a stillbirth after investigations and pathology reports to plan future pregnancies.<sup>34</sup>

#### Conclusion:

One stillbirth occurs in every 16 seconds. In spite high incidence, this issue is less emphasized, most of the death occurs in low and middle-income countries including Bangladesh. Lot of causes is determined for stillbirth but unknown etiology is about 25-60%. Counseling & support groups should be involved and we need to allow parents to sit and pray in isolation, take photographs, footprints which soothes their unbearable sorrows. It's needed to act seriously to achieve the goal. Otherwise > 19 million babies will be stillborn in the next decades. Referral to a bereavement counsellor, peer support group, or mental health professional may be advisable for management of grief and depression. Optimal evaluation for future pregnancy is essential.

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