Still birth Rate in Tertiary Care Hospital in Western Himalyan Region: A retrospective analysis of 5 Year

Abstract: Background: India was estimated to have the largest numbers of stillbirths across the global in 2015, and then government has adopted a target of less than 10 stillbirths per 1000 births by 2030 through the India Newborn Action Plan (INAP). The present study aimed to study the trends of still birth in a Tertiary Care Centre (Kamla Nehru Hospital) of Himachal Pradesh, India.

Methods: Retrospective review of records of Kamla Nehru Hospital (KNH), Shimla covering the period January 2016 to December 2020 was conducted. The total number of still births every year were retrieved. Results: A total of 34769 live birth occurred in Kamla Nehru Hospital (KNH), Shimla from 2016 to 2020. Among the total live births, 610 children born with no sign of life at, or after, twenty eight weeks of pregnancy. The still birth rate was found to be 17.2 per 1000 live birth. There was decline in still birth rate from 18.97 in 2016 to 13.36 per 1000 live birth in 2017, thereafter it increase up to 19.4 per 1000 live birth in 2018. After that it again starts declining to 18.06 in 2019 and further 16.35 per 1000 live birth in 2020. According the type of still birth , in the last five years(2016 to 2020), there were 306(50.16%) fresh still birth while 304(49.84%) macerated still birth out of total 610 still birth. Conclusions: There was decline in still birth rate over the span of last 5 years. Improving uptake of ANC & timely identification and effective management of maternal and fetal complications could reduce the preventable stillbirths.

Keywords: Trends, Still Birth, Kamla Nehru Hospital(KNH), Shimla.

INTRODUCTION

Stillbirth or intrauterine fetal death is defined as “a baby born with no sign of life at or after, twenty eight weeks of gestation.” This definition varies widely across the globe. In India, a fetus of more than 20 weeks of pregnancy or weight of less than 500 g with no sign of life is considered as still-born. The stillbirth rate (SBR) is define as “the number of stillbirths per 1000 total births divided by live birth + stillbirth (Sharma, B. et al., 2019; & http://www.nhm.gov.in).”

Stillbirth is the most common adverse pregnancy outcome. 2.6 million stillbirths occurred globally every year. The major burden of stillbirths continues to be in the sub-Saharan Africa and southern Asian countries. The stillbirth rate of lower middle-income countries (LMIC) is ten times more than the higher middle-income countries (Aminu, M. et al., 2019; & Saleem, S. et al., 2018).

Around two million stillbirths – children born with no sign of life at twenty eight weeks of pregnancy or later, occurred worldwide in year 2019. Many of these stillbirth might have been prevented with proper ANC care. According to the latest data, the global still-birth rate (SBR) last year was 13.9 stillbirths per 1000 total live births. This figure almost equates to 1 in 72 total births resulting in a stillborn child, or one in every sixteen seconds. Still, these numbers may be an under-estimate, as many stillbirths are often not or under reported (Center for disease prevention and control. 2021; & Unicef. 2021).

India is among top ten countries with highest stillbirth numbers, having stillbirth rate of 23.3 per 1000 births in 2015.Around 0.34 million of the 1.9 million stillbirths globally in 2019 were occurred in India, making it the country with the largest stillbirth burden, according to the first joint estimates released by a number of United Nations(U.N) agencies on October 8, 2020. There is wide variation of stillbirth rate (SBR) in different indian states ranging between 20 to 66/1000 births. Many are intra-partum stillbirths and around sixty percent are from rural areas having limited healthcare services (World Health Organization. 2021a).
The stillbirth rate (SBR) has declined across the globe but the yearly rate of reduction of stillbirths is only two percent, which is much slower than the reduction of maternal mortality (3.0%) and mortality of children of less than five years (4.5%). With this rate it appear impossible to achieve the target of national stillbirth rates (SBR) of 12/1000 births by the year 2030 set by Every Newborn Action Plan (ENAP) in 2014 (Lawn, J. E. et al., 2016).

To plan preventive strategies, it is important to clearly understand the etiology, risk factors & associated factors which lead to stillbirth. The cause of death must be attributed either to stillbirth clinically or pathologically. However, there are many well documented risk factors associated with stillbirth without a clear causal pathway, for example, advanced maternal age, maternal obesity & smoking. Further, in some maternal conditions the exact pathophysiology which leads to intraterine death still remains unclear. Various strategies for prevention of stillbirth included acknowledging the actual burden of still birth, providing high quality of antenatal care (ANC) and intra-partum care, using stillbirth rate (SBR) as the indicator of quality of healthcare and mother–baby dyad approach (Da Silva, F. T. et al., 2016).

There is a paucity of data regarding still birth rate in Shimla. Against this backdrop, the study was conducted to see the trends of still birth rate at Kamla Nehru Hospital (KNH) associated with Indira Gandhi Medical College (IGMC) and Hospital from the year 2016 to 2020.

**Objectives of the Study**

The objective of this study was to explore the trends of stillbirth rate at Kamla Nehru Hospital (KNH) associated with Indira Gandhi Medical College (IGMC) and Hospital situated in the Western Himalayas, from the year 2016 to 2020.

**Research Methodology**

- Research Approach- Descriptive survey
- Study Design- A retrospective review
- Setting of the study- Kamla Nehru Hospital (KNH), Shimla
- Study duration- between Jan 2016- December 2020
- Study population- All pregnant women (female) who delivered at Kamla Nehru Hospital (KNH), Shimla
- Sample size- All type of delivery conducted at Kamla Nehru Hospital, Shimla between Jan 2016- December 2020
- Permission- obtained from the concerned authorizes of Kamla Nehru Hospital (KNH), Shimla
- Data analysis with appropriate statistical test in terms of frequencies and percentage.

**Results**

A total of 347,699 live births occurred in Kamla Nehru Hospital, Shimla from 2016 to 2020. Among the total live births, 610 babies born with no sign of life at, or after, 28 weeks of gestation. The still birth rate was found to be 17.2 per 1000 live birth. (Table-1)

<table>
<thead>
<tr>
<th>Total Number</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Still Birth (Rate)</td>
<td>125(18.97)</td>
<td>89(13.36)</td>
<td>136(19.40)</td>
<td>135(18.06)</td>
<td>125(16.35)</td>
<td>610(17.24)</td>
</tr>
<tr>
<td>Live Birth</td>
<td>6465</td>
<td>6572</td>
<td>6874</td>
<td>7340</td>
<td>7518</td>
<td>34769</td>
</tr>
</tbody>
</table>

Upon further retrospective analysis, we found that there was decline in still birth rate from 18.97 in 2016 to 13.36 per 1000 live birth in 2017, thereafter it rose to 19.4 per 1000 live birth in 2018. After that it again declined to 18.06 in 2019 and further 16.35 per 1000 live birth in 2020 (Figure-2)
When we analyzed the data according to type of still birth, in the last 5 years (2016 to 2020), there were 306(50.16%) fresh still birth while 304(49.84%) macerated still birth out of total 610 still birth (Table-2).

<table>
<thead>
<tr>
<th></th>
<th>2016 %</th>
<th>2017 %</th>
<th>2018 %</th>
<th>2019 %</th>
<th>2020 %</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Still Birth Fresh</td>
<td>54</td>
<td>43.20</td>
<td>43</td>
<td>48.31</td>
<td>70</td>
<td>51.47</td>
</tr>
<tr>
<td>Still Birth Macerated</td>
<td>71</td>
<td>56.80</td>
<td>46</td>
<td>51.69</td>
<td>66</td>
<td>48.53</td>
</tr>
<tr>
<td>Total Still Birth</td>
<td>125</td>
<td>100.00</td>
<td>89</td>
<td>100.00</td>
<td>136</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Upon further analysis, we found that although both type of still births seems almost equal in 5 year average, but still birth (fresh) was increased from 43.2% in year 2016 to 57.6% in year 2020 while still birth (Macerated) was decreased from 56.8% in year 2016 to 42.4% in year 2020 (Figure-2).

**DISCUSSION**

Globally, Stillbirth (SB) is a major public health problem affecting over 7000 families per day and is associated with social, emotional & economic consequences. The Government of India (GoI) has developed an Indian Newborn Action Plan (INAP) which includes efforts to decrease the stillbirths to less than 10 per 1000 live births by the year 2030. Even the modest reduction in India’s SBR would translate into thousands of lives saved (Altijani, N. et al., 2018).

Many pregnancy related complications including eclampsia, anemia, hypertensive disorders, antepartum hemorrhage, intrapartum hemorrhage, abnormal fetal position, breech presentation & obstructed labor significantly increased the chances of stillbirth (Altijani, N. et al., 2018).

Among the total of 34769 live births occurred in Kamla Nehru Hospital (KNH), Shimla from 2016 to 2020, 610 babies (child) born (births) with no sign of life at, or after, 28 weeks of gestation. The still birth rate was found to be 17.2 per 1000 live birth which was near equal to national SBR value. There was decline in still birth rate from 18.97 in 2016 to 13.36 per 1000 live birth in 2017, thereafter it rose up to 19.4 per 1000 live birth in 2018. After that it again starts declining to 18.06 in 2019 and further 16.35 per 1000 live birth in 2020. According to this type of still birth, in the last 5 years (2016 to 2020), there were 306(50.16%) fresh still birth while 304(49.84%) macerated still birth out of total 610 still birth.

The nation had made substantial development in declining the stillbirth rate over the past 2 decades. The rate had decreased to 13.9 stillbirths per 1000 live births in the year 2019, from 29.6 in the year 2000, a 53% reduction. Worldwide, a 35% reduction in stillbirth rate was recorded during this period. Stillbirths have not been decreased as rapidly as maternal & newborn mortality, in spite of huge efforts being made since 2000. If these current trends continue, an additional 19 million stillbirths will occur by the year 2030. This would results in an immense and unjust strain on females, their families & society (Altijani, N. et al., 2018; & Unicef. 2021a).

The Indian government has made various efforts including cash assistance & dedicated health services through community health workers with a major focus in the states with poor health and developmental indicators. Improving the standard of pregnancy care with specific measures to prevent stillbirth are very important in addition to increasing coverage of ANC. Improving this uptake of antenatal care (ANC), timely identification and effective management of maternal and fetal complications could significantly reduce preventable stillbirths (Altijani, N. et al., 2018; & Unicef. 2021b).
At least eight prenatal checkups, one ultrasound before twenty fourth weeks of gestation & a daily intake of iron and folic acid (IFA) supplements are required to prevent a stillbirth, according to the World Health Organization (WHO) (World Health Organization. 2021b).

India has a huge cadre of frontline healthcare workers or community health workers called ‘ASHAs’ and ‘Anganwadi workers (AWWs). They could play a very major role in timely recognition of danger signs of still birth through frequent interactions with pregnant female who are at a higher risk of stillbirth. In addition to this, ASHAs and AWWs are ideally placed to facilitate information, education & communication (IEC) programs to specifically reduce the stigma around reporting of stillbirth (National Health Mission. 2021).

CONCLUSION

The stillbirth rate has declined during the study period of five years. Improving uptake of ANC, timely recognition and effective management of maternal & fetal complications could reduce preventable stillbirths. More attention to the risk factors and then treating the causes of stillbirths will be required to reach Every Newborn Action Plan target of stillbirth reduction. More studies are required to identify various risk factors separately for antepartum and intrapartum stillbirths in India.

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Ethical Approval: approved by concerned authority

REFERENCES