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Maternal Age and the Risk of Antepartum Stillbirth throughout Pregnancy

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Abstract: Stillbirths is emotionally traumatic event.The risk factors are many, some of which maybe modifiable during pregnancy.However, there are few which cannot be modified in the antenatal period, maternal age being one of them.The objective of the study was to examine the relationship of maternal age with antepartum stillbirth risk throughout gestation. Women with gestational age greater than 22 weeks were selected. Intrapartum stillbirth; pregnancies with either hypertensive disease of pregnancy or any other medical diseases were excluded. Data collected was analyzed. Of the 973 deliveries, the antepartum stillbirth was 119 (12.2%).Most of women who had antepartum stillbirth were in the age group 20 to 29 years.However,agewise analysis showed highest rate of antepartum stillbirth in women ≥ 35 years .Women > 35 years age are at highest risk of stillbirth. Hence women with advanced maternal age should be screened and undergo increased antenatal surveillance to prevent stillbirth.
Keywords: Antepartum Stillbirth, Maternal age.

INTRODUCTION

Stillbirth is an important indicator of the health status of a population. It indicates both the maternal health status and the quality and accessibility of primary health care available for pregnant women and the quality of antenatal and delivery care [1]. Stillbirth rate in India is 4 per 1000 birth and 6 per 1000 birth in Rajasthan in 2015 [2].

The lowest rates of stillbirths have been reported from Finland and Singapore (2.0 per 1000 births) and from Norway and Denmark (2.2 per 1000 births).Most of the stillbirths occur in the developing nations, with ten countries (Pakistan, Nigeria, China, Demographic Republic of the Congo, Ethiopia, Bangladesh, Indonesia, Tanzania, Afghanistan, and India) accounting for over two-thirds of all cases[3].

The risk factors for stillbirths have been described for stillbirth as multifactorial, multiple interrelated, which may be socioeconomic, cultural, and biological and may be related to the quality of health care[4].

According to ICD 10, antepartum stillbirth is defined as fetal death after 22weeks of gestation, or with a birth weight more than 500gm, with an Apgar score 0 at 1 and 5minutes and signs of maceration, absent fetal heart sound by Doppler ultrasound before the initiation of labour. More than half of the stillbirth occur during the antepartum periodic (ICD 10 code P95)[5].

Across the world, there is a rising trend among women towards delaying pregnancy and child birth. A significant proportion of women are electing to postpone their pregnancy well late into the fourth and fifth decades and this has many social and medical issues attached to it[6]. This trend is observed universally, irrespective of the race and economic status[7].

Objective

The objective of this study was to find out the relationship of maternal age with risk of antepartum stillbirth throughout gestation.

MATERIALS AND METHODS

This was a observational prospective study over a period of three months from July 2017 to October 2017 in a tertiary care referral centre.Women with documented singleton pregnancy more than 22 weeks were selected from those admitted in labor room for delivery. Intrapartum stillbirth and pregnancies with hypertensive disease of pregnancy, anaemia or any medical diseases were excluded. Data collected was analyzed.

RESULTS AND DISCUSSION

Of the total of 1375 deliveries, 402 delivery were excluded by exclusion criteria {anaemia- 197,

hypertensive disease of pregnancy -86, thyroid disease - 79, diabetes -32, heart diseases–8}. 854 live births and 119 antepartum stillbirths were included for the study.Stillbirth rate was 12.2%.Though maximum number of stillbirths occurred in 20-24 years age group,it was because maximum women in the study were in this age group.Most (38.02%) women were in the age group of 20– 24 years,because of early marriage in Rajasthan. For the same reason,elderly women are very few from the geographical area from where women come to the hospital**.**Maximum proportion of antepartum stillbirth occurred in women ≥ 35 years.7 out of 22 women (31.81 %) in this age group had antepartum stillbirth. Table 1

We found in our study that extremes of age was a significant risk factor for antepartum stillbirth which was also found in other studies[8-11] Similar results were also found in Indian studies from India from Chandigarh by Newtonraj A. *et al.* [12] and Bangalore by Srushti R *et al*.[13].

M. Reddy U. *et al*. [14] reported that the risk of stillbirth at 37 to 41 weeks for women 35 to 39 years was 1 in 382 ongoing pregnancies and for women 40 years old or older it increased further to 1 in 267 ongoing pregnancies. Gestational agewise analysis with live births showed that maximum antepartum stillbirth occurred in 24 to < 28 weeks of gestation (37.5 %).Table 2

The foetus below 24 weeks also died after birth. On correlating with maternal age, maximum foetal mortality was in 28 to 33 weeks gestation. Though in younger women, less than 20 year old, the gestational age of stillbirths was 37-40 weeks. Table 3

Hence, advanced maternal age remains an independent risk factor for stillbirth, even after accounting for medical conditions that are more likely to occur in older women, such as multiple gestation, hypertension, diabetes, previous abortion, and abruptio placenta, all of which are associated with higher rates of stillbirth [8].

Efforts to better understand the biological mechanisms of the aging process that are associated with stillbirth risk are required. One hypothesis postulated that failure of the uterine vasculature and placental aging in older women to adapt sufficiently to the increased hemodynamic demands of pregnancy was responsible for the stillbirth [14].

Table-1: Maternal Age and Risk of Antepartum Still Birth

S No	Maternal Age (years)	Total Women n=973	Live Births n=854	Antepartum Stillbirths; n=119 (%)
1	<20	126	119	7 (5.55%)
2	20-24	408	331	77 (18.87%)
3	25-29	379	358	21 (5.54%)
4	30-34	38	31	7 (18.42%)
5	≥ 35	22	15	7 (31.81%)

Table-2: Gestational Age and Antepartum Still Birth Still Birth

S No	Gestational Age (Weeks)	Total Women n=973	Live Births n=854	Antepartum Stillbirth n=119(%)
1	<24	2	2	0
2	24-<28	56	35	21 (37.5 %)
3	28-<33	145	96	49 (33.8 %)
4	33-<37	318	304	14 (4.4 %)
5	37-40	403	375	28 (6.9 %)
6	>40	49	42	7 (14.3 %)

Table-3: Antepartum Still Birth

S.No	Maternal Age (Yrs)	Total	Gestational Age (Weeks)					
			<24	24 -<28	28 - <33	33- <37	37-40	>40
1	<20	7	-	-	-	-	7	-
2	20-24	77	-	21	28		21	7
3	25-29	21	-	-	7	14	-	-
4	30-34	7	-	-	7	-	-	-
5	≥35	7	-	-	7	-	-	-
	TOTAL		0	21 (17.6 %)	49 (41.17 %)	14 (11.7%)	28 23.5%)	7 (5.8 %)

CONCLUSION

From these observation ,we can concluded that women ≥ 35 years age are at highest risk of antepartum stillbirth and increased morbidity due to puerperal sepsis, post partum hemorrhage and deranged coagulation profile leading to blood transfusions and longer hospital stay as compared to live birth.

RECOMMENDATIONS

Women counselled about optimum age of marriage and child birth. Women with advanced maternal age should be screened and undergo increased antenatal surveillance to prevent antepartum still birth. Optimal antenatal care given by a skilled healthcare provider is a cost-effective intervention for prevention of stillbirth. These visits provide a screening opportunity for certain risk factors that are associated with antepartum hemorrhage, medical conditions (e.g. poorly controlled diabetes mellitus, thyroid disorders etc.), infections or hypertensive disorders. If the risks are timely detected, the clinicians have the opportunity to manage or treat the specific conditions and to establish a future care plan. Additionally, they can provide counseling to mothers and families, all of which can help to prevent antepartum stillbirth. If a woman has no antenatal visits, these medical conditions are not recognized in early stage and lead to fatal outcome, one of which may stillbirth.

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