

## ORIGINAL ARTICLE

# Frequency of Stillbirths in Obese Pregnant Women

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## ABSTRACT

**Objective:** To determine the frequency of stillbirths in obese pregnant women.**Design of the Study:** It's a descriptive cross-sectional study.**Study Settings:** This study was carried out at Department of Obstetrics and Gynecology, Lady Reading Hospital Peshawar from January 2018 to July 2018.**Material and Methods:** In this study a total of 289 patients were observed. Detailed history was taken from each patient, period of gestation was calculated from 1st trimester scan, conducted by a person having at least 2 years post-graduate training experience in his/her respective field. Height/Weight measurements were done by the same standardized equipment's for all enrolled patients and BMI calculation done by standard WHO formula before delivery. Baby after delivery was examined and looked for presence/absence of vital signs by the designated obstetrician. Outcome of pregnancy either alive or stillborn baby was recorded for each patient in order to fulfill the objective of study. To control bias and confounding, exclusion criteria had strictly followed. All the data was recorded on a pre-designed Proforma and subjected to analysis.**Results of the Study:** Our study shows that mean age of 28.87 +3.92 years Forty two percent patients were primi gravid and 58% patients were multi gravida. Forty three percent patients were primi para while 57% patients were multi para. Ninety percent babies were alive while 10% babies were still birth.**Conclusion:** Our study concludes that the frequency of still births was 10% in obese pregnant women.**Keywords:** still births, obese, pregnant women, primi para, WHO.

## INTRODUCTION

The proportion of women with overweight or obesity in early pregnancy is continuously increasing in the world. The problem with obesity has reached pandemic proportions.<sup>1,2</sup> Increasing body mass index (BMI) is associated with increased risks of complications during fertilization, implantation, pregnancy, delivery and the post-partum period. The risks are increased for both mother and child in the short-term as well as in the long-term perspective. The fetus can be affected by an increased risk of congenital defects and macrosomia.<sup>3</sup>

In countries with scarce health resources, stillbirth is a biggest problem. At the same time, it is also a major public health issue in high resource countries. Majority of the perinatal deaths of stillbirth are associated with 22<sup>nd</sup> week of gestation.<sup>4</sup> Global burden of stillbirths is 3.2 million per annum which is almost equal to annual neonatal deaths annually which is 3.0 million. Frequency of still birth is very high in low-income countries of the world.<sup>5</sup> Among high income countries, its prevalence is very high in the United Kingdom and United States. In 2006, about 26000 stillbirths were reported in the USA that comes to 6.1 out of 1000 live births while in UK it was about 3800 with ratio of 5.2 per live birth.<sup>6</sup> Globally, Pakistan was among countries with highest still births during the year 2015 that was 43.1 still births per 1000 total births while during that year its global burden was 18.4 per 1000 total births.<sup>7</sup> Despite of a matter of high concern, the matter of still births remained an unrecognized issue in many counters across the globe and Pakistan as well.<sup>8</sup>

However, in high resource countries, a drastic decrease has been seen in its prevalence as low as 5 per 1000 stillbirths and it remained very low to the tune of 3-

4/1000 total births. But, in the same regime frequency of neonatal mortality declined with fast speed; resulting into increase in proportion of still births.<sup>9</sup>

Ratio of still births in Pakistan is 36-98 per 1000 live births. Stillbirth is associated with many risk factors among them some common and highly affecting factors are maternal disorders (diabetes and pre-eclampsia), maternal infection during pregnancy, foetal growth restrictions, complications related with child birth and congenital abnormalities.<sup>10</sup> Moreover, the ratio of deliveries at home is about two-third of total deliveries and about 62% of deliveries are handled by untrained birth attendants.<sup>10</sup> In this nexus, another factor is base of majority of researches was based at hospitals having major focus on neonatal and maternal deaths with least interest in stillbirths.<sup>11,12</sup>

With the increased ratio of complications in pregnancies which is added up by obesity, rate of stillbirths is very high and it is imperative to develop a screening strategy on obese population. The aim of the present study was to determine the frequency of stillbirths in obese pregnant women. Stillbirth is under-researched despite its high incidence, compared to other pregnancy complications. Due to scarcity of data on this so far neglected issue and increasing load of patents with stillbirths locally, findings of the study should be seen as impetus for more refined studies that will potentially offer answers to many questions emanating from these preliminary efforts.

## MATERIAL AND METHODS

Before starting the study permission from Institutional Ethical Committee was obtained. This study was carried out at Department of Obstetrics and Gynecology, Lady

Reading Hospital Peshawar from January 2018 to July 2018. The study design was descriptive cross-sectional. As maternal obesity may be linked for 25% of stillbirths (literature review), choosing to calculate sample size from WHO sample size calculation where  $P=25\%$ , Confidence Interval= $95\%$ , Margin of error ( $\alpha$ )= $5\%$ , total sample size = 289. For data collection non-probability (consecutive) sampling method was used. Pregnant women who delivered in the unit of study, singleton 24+ onwards POG, aged between 18-40 years, Parity $<7$ , Having BMI of  $>25\text{kg/m}^2$  were included in this study. Additional deliveries were conducted by an obstetrician of the unit of study having at least 2 years post graduate experience in her respective field. Pregnant women with multifetal pregnancies, women with diabetes/hypertension and sequelae, pregnancies affected by congenital anomalies with poor prognosis were excluded. Patients in whom delivery is complicated by APH, cord prolapse, prolonged labour or maternal accident were also excluded.

## STUDY RESULTS

Analysis of age of participants of the study shows that 121 (42%) patients belonged to age group 18-30 years while 168(58%) patients were in age range 31-40 years out of total 289 patients. Mean age of 28.87  $\pm$ 3.92 years. Gestational age among 289 patients was 13% patients were at pre term, 208(72%) patients were at term while 43(15%) patients were at post term. Status of BMI among 289 patients was analyzed as 237(82%) patients had BMI range 24-30 Kg/m<sup>2</sup> while 52(18%) patients had BMI range 31-36 Kg/m<sup>2</sup>. Mean BMI of 28.93  $\pm$ 1.82 Kg/m<sup>2</sup>. Status of gravidity among 289 patients was analyzed as 121(42%) patients were primi gravida while 168(58%) patients were multi gravida. Status of race among 289 patients was analyzed as all patients had no race 289(100%). Status of education level among 289 patients was analyzed as 87(30%) patients were educated while 202(70%) patients were un-educated. Socioeconomic status among 289 patients was analyzed as 150(52%) patients were poor, 110 (38 %) patients were middle class and 29(10 %) patients were rich. Status of prenatal care among 289 patients was analyzed as 52(18%) patients had prenatal care, 237 (82%) patients didn't had prenatal care. Status of smoking / other addiction among 289 patients was analyzed as none of the patients had the habit of Smoking / other addiction. Status of prior still birth among 289 patients was analyzed as 43(15%) patients had prior still birth, 246(85%) patients didn't had prior still birth. Status of height among 289 patients was analyzed as 223(77%) patients had height range 1.54-160 meters while 66(23%) patients had height range 1.61-170 meters. Mean height 1.64 $\pm$ 4.38 meters. Status of weight among 289 patients was analyzed as 223(77%) patients had weight range 80-100 kgs while 66(23%) patients had weight range 100-120 kgs. Mean weight 92.70  $\pm$ 4.70 kgs status of mode of delivery among 289 patients was analyzed as 194(67%) patients had NVD while 95(33%) patients had C section. Status of baby weight among 289 patients was analyzed as 23(8%) babies were LBW, 173(60%) babies had normal weight while 93(32%) babies were a microsomia. Status of still birth among 289 patients was analyzed as 250(90%)

babies were alive while 29(10%) babies were born still birth.

Stratification of still birth with age, gravidity, and mode of delivery given in table no 2, 3, 4 & 5

Table 1: Socio-demographics of different parameters

Parameter	Frequency	Percentage	
Age	18-30 years	121	42%
	31-40 years	168	58%
Gestational Age	Pre term	38	13%
	Term	208	72%
	Post term	43	15%
	Mean gestational age= 37.48 $\pm$ 2.47 weeks		
Body Mass Index BMI	24-30 kg/m <sup>2</sup>	237	82%
	31-36 kg/m <sup>2</sup>	52	18%
Gravida Distribution	Pri gravida	121	42%
	Multi gravida	168	58%
Race/ Ethnicity	Normal	100	100%
Educational Level	Educated	87	30%
	Non-Educated	202	70%
Socioeconomic status	Poor	150	52%
	Middle Class	110	38%
	Rich	29	10%
Prenatal Care	Yes	52	18%
	No	237	82%
Smoking/Other Addiction	Yes	0	0%
	No	289	100%
Prior Still Birth	Yes	43	15%
	No	246	85%
Height	1.54-1.60 meters	223	77%
	1.61-1.71 meters	266	23%
	Mean height= 1.64 $\pm$ 4.38		
Weight	80-100 kg	223	77%
	100- 120 kg	266	23%
	Mean weight= 92 $\pm$ 4.70		
Mode of Delivery	NVD	194	67%
	C-Section	95	33%
Baby Weight	LBW	23	8%
	Normal	173	60%
	Macrosomia	93	32%
Outcome	Alive	260	90%
	Still Birth	29	10%

Table 2: Stratification of outcome with W.R.T. Age Distribution

Outcome	18-30 years	31-40 years	Total
Alive	109	151	260
Still Birth	12	17	29
Total	121	168	289

P-value was 0.9551 on Chi Square test.

Table 3 Data Stratification W.R.T Gravida

Outcome	Primi gravida	Multi gravida	Total
Alive	109	151	260
Still birth	12	17	29
Total	121	168	289

p-value was 0.9551 on Chi Square Test

Table 4 Data Stratification W.R.T Mode of Delivery

Outcome	NVD	C-Section	Total
Alive	175	85	260
Still birth	19	10	29
Total	194	95	289

Chi Square test was applied in which p-value was 0.8456

## DISCUSSION

At global level, ration of still births is very high in Pakistan and is a very alarming situation.<sup>13</sup> This study showed high estimation of stillbirths to the tune of 18 per 1000 live births which is comparatively less as shown in published data for Pakistan.<sup>14, 15</sup> It may be associated with conduct of studies in tertiary care system and booking relevant cases only.

However, it is worth mentioning here that there is three times increase in deliveries at hospitals where good antenatal and obstetrical care facilities have been provided during last two decades. Other countries having high ratio of still births also belong to developing regions and are India, Nepal and Bangladesh.<sup>16</sup>

Our study shows that mothers who delivered to still birth were age between 31 to 40 years. Our this finding is in line with Mustafa et al. (2016)<sup>12</sup> who reported that maternal age was between 20-34 years who gave birth to still births (73.22%). Likewise, findings were reported by researchers in Pakistan, India and Nepal.<sup>17,18,19</sup> Contrary to it, in developed countries, still birth is highly associated with maternal age and old age has high frequency (>35 years).<sup>20,21</sup>

Rate of stillbirth is very high in primiparous mothers. Our study proved ratio of still births to be 61% in primiparous mothers (61%). However, this high frequency may be decreased by making early detection of risk factors in such mothers but owing to lack of best antenatal care facilities, such mothers have high chances of delivering stillbirth.<sup>22,23</sup>

In comparison, low risk of stillbirth in primiparous mothers has been reported from developed countries which may be due to well established infrastructure.<sup>10, 20</sup>

Our study shows that at mean age of 28.87±3.92 years. Forty two percent patients were primi gravid and 58% patients were multi gravida. In another study Secher et al.(2005)<sup>24</sup> had reported that the frequency of still births was 8% in obese pregnant women in which majority of the women were in age 31-40 years, multigravida.<sup>24</sup> Similar results were observed in another study conducted by Salihi et al.(2005)<sup>25</sup> in which the incidence of still births in obese pregnant women was 10%. Nohr et al. (2005)<sup>26</sup> had reported 12% incidence of still births in pregnant women.

Similar results were observed in another study conducted by Yao R et al. (2014)<sup>27</sup> in which the frequency of still births was 13% in obese pregnant women. Similar results were observed in another study conducted by Aune et al. (2014)<sup>28</sup> in which the frequency of still births in obese pregnant women was 7%.

## CONCLUSION

Our study concludes that the frequency of still births was 10% in obese pregnant women.

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