

# Frequency of Short Interpregnancy Interval in Females with Preterm Birth

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## ABSTRACT

**Aim:** To find the frequencies of short interpregnancy interval (IPI) in women with preterm births.

**Methods:** This cross sectional study was done at RHC Manga Mandi, District Lahore. The study was done in 3 months and data was collected using non-probability consecutive sampling. A total of 150 subjects delivered preterm birth with aged 18-35 years with previous one pregnancy without last history of abortion. The time gap between first birth and date of corresponding higher order births or in a technical term Labeled Index Pregnancy was determined as inter-pregnancy interval. The statistical analysis of our data is thoroughly analysed in SPSS 22.

**Results:** The mean age of all females was 27.47±4.877 years with minimum and maximum age of 18 and 35 years. The average interpregnancy interval was 15.540±5.33 with minimum and maximum interpregnancy interval as 6 and 24 months. According definition the short interpregnancy interval (≤18 months) was seen in 117(78%) of the cases.

**Conclusion:** Through the findings of this study we conclude that short IPI is common in females with preterm birth i.e., 117(78%) of the cases. Proper family planning and use awareness regarding consequence of short IPI are yet needed to minimize the risk of poor fetal and maternal outcome.

**Keywords:** birth spacing, family planning, prematurity, gestational age

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## INTRODUCTION

We can define preterm birth usually as birth occurring in the gestational time of less than 37 weeks or 259 days of normal gestation<sup>1</sup>. Preterm birth is prevalent up to 5% to 7% of among live birth in urbanized countries<sup>2</sup>. There are various risk factors for preterm birth which various are modifiable like interpregnancy interval. The awareness and implementation of complete birth spacing has increased significantly among women and children in developing countries.<sup>3</sup> Interpregnancy interval is time gap between first child birth and conception time of next pregnancy<sup>4</sup>. The interval is estimated as the difference between the date of delivery of the current pregnancy and that of the previous pregnancy minus the gestational age of the current pregnancy<sup>5</sup>. There is different definition for short IPI and long when it is greater than 5 years<sup>6</sup>.

Various studies are done in which short IPI are discussed in relation to different fetomaternal outcome. It is a usual observation that women with a short IPI do not have enough time for health and other recoveries for next pregnancy. There are various causes of SIPI that includes cultural, socio-economic and psychological<sup>7</sup>. This study is designed

in rural setup where females usually have low antenatal visits and few modifiable risk factors related to preterm birth are observed in which short interpregnancy interval is commonly seen so we designed this study to see frequency of short interpregnancy interval in females delivering preterm birth.

## MATERIALS AND METHODS

This cross sectional study was done at RHC Manga Mandi, District Lahore. The study was done in 3 months and data was collected using non-probability consecutive sampling. A total of 150 subjects delivered preterm birth with aged 18-35 years with previous one pregnancy without last history of abortion. Females not willing to participate in the study were excluded from the study. After taking an informed consent from all subjects their age, parity and gestational age in weeks was taken. The time gap between first birth and date of corresponding higher order births or in a technical term Labeled Index Pregnancy was determined as inter-pregnancy interval. The statistical analysis of our data is thoroughly analyzed in SPSS 22. Qualitative data/discreet data such as parity and short inter pregnancy interval (as per operational definition) was presented in form frequency (%). Quantitative data such as maternal age (years) and gestational age (weeks) was presented mean±S.D.

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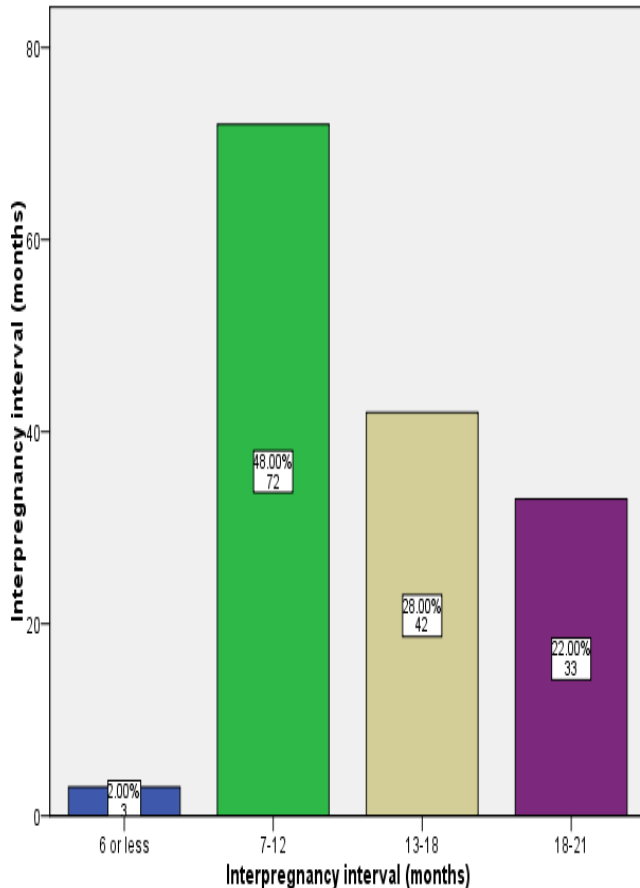
**RESULTS**

The mean age of all females was 27.47±4.877 years with minimum and maximum age of 18 and 35 years. The duration of marriage was 5.7± 3.25 years with mean parity of 2.22±1.40 (1 and 7 as minimum and maximum parity). The average interpregnancy interval was 15.540±5.33 with minimum and maximum interpregnancy interval as 6 and 24 months. According definition the short interpregnancy interval (≤ 18 months) was seen in 117(78%) of the cases. On further categorization we observed that 3(2%) females had ≤ 6 months, 72(48%) 7-12 months, 42(28%) females had 13-18 months and 33(22%) had ≥ 18 months of interpregnancy interval.

Table1: Descriptive Statistic of quantitative variables

	Mean	S.D	Range	Min.	Max.
Age (years)	27.47	4.877	17	18	35
Duration of marriage (yrs)	5.70	3.25	13.5	1.5	15.0
Inter pregnancy interval (Months)	15.54	5.33	18.0	6.0	24.0

Fig-1: Description of interpregnancy interval



**DISCUSSION**

In this study we took females delivered preterm birth from age 16 to 35 years with mean age of 27.47±4.877 years. In literature it reported that mothers 35 years or older at start of childbearing have the highest risk of poor fetomaternal outcome compared to mothers aged 20 to 29 years, even after controlling for potential confounders.<sup>8</sup>When studies on effect of IPI on still birth and neonatal death of foetus are analysed they are found to be quite different from each other.<sup>9</sup>As the adverse outcomes for women in pregnancy are significantly more when short IPI is present so different new adverse mechanisms have evolved such as Maternal Depletion that includes nutritional suppression of following pregnancies and reduced lactation,<sup>10</sup> hormonal levels upsetting or fluctuations<sup>11</sup> and subsequent stress during postpartum<sup>12</sup>; recent study by Smits and Essed<sup>13</sup> clearly assumes that depletion of maternal folate depletion induces more adverse outcomes in pregnancy. In addition to this several maternal factors such as poor socioeconomical status of women, smoking and some other characteristics may be associated with increases inter-pregnancy intervals.<sup>13</sup>In this study IPI ≤18 months was seen in 117(78%) of the cases. On further categorization we observed that 3(2%) females had ≤6 months, 72(48%) 7-12 months, 42(28%) females had 13-18 months and 33(22%) had ≥18 months of interpregnancy interval. A recent study published in BJOG was published on 454,716 births, 87% of population showed a normal IPI of greater than or equal to 18 months, 10.7% of population had IPI between 12 to 18 months of gestation and 2.2% had short IPI of IPI<12 months. The risk of early delivery was higher following short IPI<12 months<sup>14</sup>. Our findings are comparable with above cited statistics. Previous study reported that Short interval interpregnancy (≤6 months) was seen in 11.02% in female's preterm delivery (< 37 weeks)<sup>15</sup>. Moreover one more study reported that of short IPI was 9.74% in preterm birth (gestation age less than 37 weeks).<sup>16</sup> We found less no of females having IPI ≤6 as compared to these studies.

Various risk factors are considered for short IPI for example learning and awareness among women as well as their low socioeconomic factor has a parallel effect on birth interval time by influencing some of bio-behavioral factors.<sup>17, 18</sup>Hence there are some notable differences between IPI of urban and rural women that shows women living in rural areas have less chances of IPI more than five years. Hence in future for females with short IPI, additional attention for the prolongation of pregnancy should be given to during antenatal visits.

## CONCLUSION

Through the findings of this study we conclude that short IPI ( $\leq 18$  months) is common in females with preterm birth i.e., 117(78%) of the cases. Proper family planning and use awareness regarding consequence of short IPI are yet needed to minimize the risk of poor fetal and maternal outcome.

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