

ADVERSE PREGNANCY OUTCOME IN PATIENTS HAVING INTERPREGNANCY INTERVAL LESS THAN 12 MONTHS

DR. FAIZAN – UD-DIN SHEIKH, MBBS
NISHTAR HOSPITAL, MULTAN, PAKISTAN.

DR. JAVARIA YOUSUF, MBBS
NISHTAR HOSPITAL, MULTAN, PAKISTAN.

DR. SIDRA LIAQAT, MBBS
NISHTAR HOSPITAL, MULTAN, PAKISTAN.

ABSTRACT;

Background; The time interval between pregnancies is considered to be an important and modifiable risk factor in terms of adverse perinatal outcomes. **Objective:** To determine the frequency of preterm labour in patients with short interpregnancy interval. **Subjects and Methods;** Patients with interpregnancy interval (n = 223) equal or less than 12 months having gestational age between 24 and 40 weeks with parity more than 1 were included in our study. Data was entered and analyzed by SPSS version 20. **Results;** Of these 223 study cases, 198 (88.8 %) were Housewives while 25 (11.2 %) were working ladies. Mean age of our study cases was 26.93 ± 3.96 years. Of these 223 study cases, 74 (33.2%) belonged to rural areas and 149 (66.8 %) belonged to urban areas. Monthly family income up to Rs. 25000 was noted in 67 (30%) and more than Rs. 25000 was noted in 156 (70.0%) of our study cases. Of these 223 study cases, 158 (70.9%) were illiterate and 65 (29.1%) were literate. Of these 223 study cases, 50 (22.4%) were Urdu speaking, 58 (26%) were Punjabi, 82 (36.8%) were Saraiki, 17 (7.6%) were Baloch, 8 (3.6%) were Kashmiri and 8 (3.6%) were Pathan. Mean height was 161.24 ± 9.23 centimeters while mean weight was 62.23 ± 8.58 kilograms. Mean body mass index of our study cases was 26.25 ± 1.93 kg/m² and obesity was present in 49 (22%) of our study cases. Mean inter-pregnancy interval was noted to be 8.52 ± 3.11 months. Mean gestational age was 38.23 ± 2.56 weeks and preterm labor was noted in 80 (35.9%) of our study cases

Conclusion; Short interpregnancy interval leads to adverse pregnancy outcomes. Very high frequency of preterm labor was noted in our study cases having interpregnancy interval less than 12 months. Short interpregnancy interval was common in poor and uneducated families. Preterm labor was significantly associated with age, residential status, obesity, ethnicity and literacy.

Keywords; Short Interpregnancy interval, Preterm labor, Frequency

INTRODUCTION:

Preterm births are leading cause of mortality and morbidity for newborns and a major cause of morbidity for pregnant women^{1,2}. Preterm birth occurring at less than 37 completed weeks of gestation, is the direct cause for 24% of neonatal deaths. Rates of preterm birth have been reported to range from 5-7% of live births in some developed countries and are estimated to be substantially higher in developing countries. Comparing with children born at term, preterm infants face to higher risk of several disabilities including neuro-developmental impairments, gastrointestinal complications, cerebral palsy, sensory deficits, learning disabilities, and respiratory illness. The morbidity associated with preterm birth often extends to later life resulting in physical, psychological, and economic costs. The precise role of events linked to an increased risk of preterm birth is unknown^{3,4}.

Risk of preterm labor in women with history of diabetes mellitus, thyroid dysfunction, and cardiac disease is 2.3 times higher than healthy mothers^{5,6}.

A short interpregnancy interval (IPI) is a risk factor for preterm delivery among women of reproductive age⁷. Interpregnancy interval – the time between the birth of one child and the conception of the next – appears to be one factor associated with preterm birth. Interpregnancy intervals less than 18 months and greater than 59 months are significantly associated with an increased risk of adverse perinatal outcomes. The biological mechanism between short interpregnancy interval and poor maternal and neonatal outcomes is hypothesized to be due to insufficient time for the mother to recover from the nutritional burden and stress of the previous pregnancy. Specifically, depleted maternal protein, low energy status, and deficiencies in folate and iron have been considered⁸.

A study conducted by Lilungulu et al reported preterm labour in 29.3 %⁹ patients with short inter-pregnancy interval. De-Weger et al¹⁰ reported preterm birth in 7.7 % of pregnant ladies with short inter-pregnancy interval.

This proposed study is designed to document to role of short IPI with preterm birth, some studies from different parts of the world have related short interpregnancy interval with preterm birth with varying frequencies (starting from 7.7 % to as high as 29 %) ^{9, 10}.

Material and Methods;

Patients with interpregnancy interval (n = 223) equal or less than 12 months having gestational age between 24 and 40 weeks with parity more than 1 were included in our descriptive study. Patients having multiple gestations, Patients with UTI and fetal anomalies, diabetes and hypertension and with previous miscarriage and preterm births were excluded from our study. Patients were selected from OPD of department of Obstetrics and Gynecology, Nishtar Hospital Multan. Detailed history was taken regarding demographic distribution such as residential status, family income, educational level, ethnicity, occupation, obesity, parity and duration of pregnancy. Duration of gestation was estimated according to patients calculated from first trimester ultrasound. Patients were followed till delivery for the final outcome i.e. preterm birth. Data was transferred and analyzed by SPSS version 20. Descriptive statistics was used to calculate Mean and standard deviation for the age of patients, IPI, height, weight, gestational age and BMI. Frequencies and percentages were calculated for outcome variables preterm birth, age groups, residential status (Rural/Urban), educational level, ethnicity, occupation, obesity and monthly family income.

RESULTS;

Our study comprised of a total of 223 patients meeting inclusion criteria of our study. Of these 223 study cases, 198 (88.8 %) were Housewives while 25 (11.2 %) were working ladies. Mean age of our study cases was 26.93 ± 3.96 years (with minimum age of our study cases was 21 years while maximum age was 38 years). Our study results have indicated that majority of our study cases i.e. 190 (85.2 %) were aged less up to 30 years. Of these 223 study cases, 74 (33.2%) belonged to rural areas and 149 (66.8 %) belonged to urban areas. Monthly family income up to Rs. 25000 was noted in 67 (30%) and more than Rs. 25000 was noted in 156 (70.0%) of our study cases. Of these 223 study cases, 158 (70.9%) were illiterate and 65 (29.1%) were literate. Of these 223 study cases, 50 (22.4%) were Urdu speaking, 58 (26%) were Punjabi, 82 (36.8%) were Saraiki, 17 (7.6%) were Baloch, 8 (3.6%) were Kashmiri and 8 (3.6%) were Pathan. Mean height was 161.24 ± 9.23 centimeters while mean weight was 62.23 ± 8.58 kilograms. Mean body mass index of our study cases was 26.25 ± 1.93 kg/m² and obesity was present in 49 (22%) of our study cases. Mean inter-pregnancy interval was noted to be 8.52 ± 3.11 months. Mean gestational age was 38.23 ± 2.56 weeks and preterm labor was noted in 80 (35.9%) of our study cases.

DISCUSSION;

The time interval between pregnancies is considered to be an important and modifiable risk factor in terms of adverse perinatal outcomes.¹¹⁻¹³ The frequencies of “preterm births, small for gestational age birth, anemia, PROM and low birth weights” have all been generally reported to show a significant J-shaped relationship to the time interval with regard to pregnancies ¹⁴⁻¹⁶.

Our study comprised of a total of 223 patients meeting inclusion criteria of our study. Of these 223 study cases, 198 (88.8 %) were Housewives while 25 (11.2 %) were working ladies. Mean age of our study cases was 26.93 ± 3.96 years (with minimum age of our study cases was 21 years while maximum age was 38 years). Our study results have indicated that majority of our study cases i.e. 190 (85.2 %) were aged less up to 30 years. A study conducted by Al – Jasmi Fatima et al¹⁷ from UAE reported mean maternal age 27.6 ± 4.9 years of women. These results are similar to that of our study results. Howard et al⁸ has also documented similar results in pregnant ladies with short interpregnancy interval. Lilungulu et al⁹ reported 23.4 ± 1.7 years mean age of pregnant ladies with short interpregnancy interval which is in compliance with that of our study results. Hussaini et al¹⁸ reported similar findings.

Of these 223 study cases, 74 (33.2%) belonged to rural areas and 149 (66.8 %) belonged to urban areas. Monthly family income up to Rs. 25000 was noted in 67 (30%) and more than Rs. 25000 was noted in 156 (70.0%) of our study cases. Of these 223 study cases, 158 (70.9%) were illiterate and 65 (29.1%) were literate. Of these 223 study cases, 50 (22.4%) were Urdu speaking, 58 (26%) were Punjabi, 82 (36.8%) were Saraiki, 17 (7.6%) were Baloch, 8 (3.6%) were Kashmiri and 8 (3.6%) were Pathan. Lilungulu et al⁹ also reported poor educational status being predictor of short interpregnancy interval and reported 99.1% ladies were having up to primary level of education. Howard et al⁸ reported that majority of women were having secondary level education which is

different from our study results. The reason for this difference is because Howard conducted their study in USA where literacy rates are quite higher than that of our population.

Mean height was 161.24 ± 9.23 centimeters while mean weight was 62.23 ± 8.58 kilograms. Mean body mass index of our study cases was 26.25 ± 1.93 kg/m² and obesity was present in 49 (22%) of our study cases. Al – Jasmi Fatima et al¹⁷ reported similar results from UAE.

Mean inter-pregnancy interval was noted to be 8.52 ± 3.11 months. Mean gestational age was 38.23 ± 2.56 weeks and preterm labor was noted in 80 (35.9%) of our study cases. Howard et al⁸ reported 26.83 % preterm births in patients with short IPI. These results are close to our study results. Lilungulu et al⁹ reported preterm labour was seen in 29.3 % patients with short interpregnancy interval which is in compliance with that of our study results. While in another study preterm birth was seen in 7.7 %¹⁰ of pregnant ladies with short IPI. These results are quite low than that reported in our study.

CONCLUSION;

Short interpregnancy interval leads to adverse pregnancy outcomes. Very high frequency of preterm labor was noted in our study cases having interpregnancy interval less than 12 months. Short interpregnancy interval was common in poor and uneducated families. Preterm labor was significantly associated with age, residential status, obesity, ethnicity and literacy. Birth spacing is an issue which women should have some control over. Educational interventions, including birth control, should be employed during prenatal visits and following delivery.

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