



INTERPREGNANCY INTERVAL EFFECT ON PRETERM BIRTH

Obstetrics & Gynaecology

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ABSTRACT

Identification of modifiable and non-modifiable risk factors for preterm birth before conception or early in pregnancy may help prevent this complication. A retrospective analysis of interpregnancy interval in women giving preterm birth in a tertiary health centre was done. All records of obstetric patients, from institutional data centre were examined in detail which included demographic information, reproductive history, maternal characteristics, prenatal care, labor management, maternal complications during pregnancy, delivery, and the puerperium, and neonatal outcomes. In this study, among 112 patients 30 percent were having interpregnancy interval of less than 12 months, 50 percent 12 to <24 months, 11 percent 24 to 48 months and 9 percent >48 months. Higher occurrence of short interpregnancy interval <24 months and younger age group <19 years were found in association with preterm births.

KEYWORDS

Preterm birth, interpregnancy interval, teenage pregnancy

INTRODUCTION

Preterm birth refers to a delivery that occurs between >20 and <37 weeks[1]. Worldwide, the preterm birth rate is approximately 11 percent [2]. 80 percent of preterm birth is contributed by spontaneous preterm labor (30-50%) and preterm premature rupture of membranes (5-40%), while 20 percent is contributed by multiple gestation, preeclampsia, eclampsia, antepartum bleeding and fetal growth restriction[3]. Preterm labor is one of the most common causes for hospitalization of pregnant women. The clinical findings that define true labor are same whether labor is preterm or term.

Preterm birth is likely caused by a combination of physical, environmental and biological factors. Identification of modifiable and non-modifiable risk factors for preterm birth before conception or early in pregnancy may help prevent this complication.

Earlier studies have shown that women with very short interpregnancy interval are at increased risk of preterm birth, but these studies do not clarify whether the associations are due to confounding biasedness of adverse obstetric history[4].

In this study retrospective analysis of interpregnancy interval effect on preterm birth in women with previous normal deliveries is done.

METHODS

A retrospective analysis of interpregnancy interval in women giving preterm birth in a tertiary health centre was done from december 2017 to november 2020. All records of obstetric patients, from institutional data centre were examined in detail which included demographic information, reproductive history, maternal characteristics, prenatal care, labor management, maternal complications during pregnancy, delivery, and the puerperium, and neonatal outcomes. Patients with incomplete information were excluded from the study. The study adopted the standard definition of the WHO for preterm birth[1]. Gestational age at birth was defined as the number of completed weeks of gestation based on the estimated delivery date contained in the clinical record. Interpregnancy interval was defined as the interval from the first birth until the estimated date of the last menstrual period before the second pregnancy, expressed in completed months. Patients with history of any complication in prior pregnancies were excluded. A total of 112 patients with similar socioeconomic status, literacy rate and nutritional status were included in the study. Interpregnancy intervals were categorized as <12, 12 to <24, 24 to 48, >48 months. Data were analyzed using SPSS statistical package version 22, (IBM Corp, Armonk, NY).

RESULTS

In this study, among 112 patients 30 percent were having interpregnancy interval of less than 12 months, 50 percent 12 to <24 months, 11 percent 24 to 48 months and 9 percent >48 months.

Table 1 shows maternal characteristics of the patients in study:

Maternal characteristics	Interpregnancy Interval (months)			
	< 12 (n = 34)	12 to < 24(n=56)	24 to 48(n=12)	>48(n=10)
Age				
< 19	64.7% (22)	42.6%(24)	17.2%(2)	0
19 to 35	32.3% (11)	52.1%(29)	72.7%(9)	80%(8)
>35	3%(1)	5.3%(3)	10.1%(1)	20%(2)
Parity				
1	60%	61%	61.8%	56%
2	28.3%	29%	27.5%	30.1%
≥3	11.7%	10%	10.7%	13.9%
Preterm birth at < 28 weeks	59%(20/34)	39%(22/56)	33%(4/12)	20%(2/10)
Preterm birth at > 28 weeks	41%(14/34)	61%(34/56)	67%(8/12)	80%(8/10)

43% (48/112) patients giving preterm birth were in <19 years age group, 51% (57/112) in 19 to 35 age group and 6%(7/112) in >35 years age group.

In overall study group, preterm birth at <28 weeks was 43%(48/112) and at >28 weeks was 57%(64/112). 61%(29/48) of preterm birth at <28 weeks were in <19 years age group, 25% (12/48) were in 19 to 35 age group and 14%(7/112) in >35 years age group. Of preterm birth at >28 weeks 30%(19/64) were in <19 years age group, 70% (45/64) in 19 to 35 years age group.

DISCUSSION

In this study interpregnancy intervals less than 12 months were more common in younger age group while minimal variation in interpregnancy interval was seen due to parity. Younger age groups in combination with short interpregnancy level (<24 months) were more commonly associated with preterm births similar type of association has been shown in earlier study[5]. Preterm birth at <28 weeks were more common in younger age group <19 years and <12 months interpregnancy interval. In age group >35 years interpregnancy interval were of longer durations and occurrence of preterm birth was also less. Proportion of preterm birth at <28 weeks was highest in interpregnancy interval of <12 months and showed gradual decline with the increasing interpregnancy interval in comparison to preterm birth at >28 weeks.

Observation of higher occurrence of short interpregnancy interval <24 months in association with preterm births were similar to previous studies[6]

CONCLUSION

Women should be informed of a small but significantly elevated risk of preterm birth when they conceive shortly after a birth. Contraceptive advice should be targeted towards women who are most likely to have a subsequent short interpregnancy interval such as teenagers.

REFERENCES

1. WHO. 2018. Preterm birth. <http://www.who.int/en/news-room/fact-sheets/detail/preterm-birth>.
2. WHO, March of Dimes, PMNCH, Save the Children. 15 million preterm births: Priorities for action based on national, regional and global estimates. In: Howson CP, Kinney MV, Lawn J, eds. Born Too Soon: The Global Action Report on Preterm Birth. 2012.
3. Slattery MM, Morrison JJ. Preterm delivery. *Lancet*. 2002 Nov 9;360(9344):1489-97. doi: 10.1016/S0140-6736(02)11476-0. PMID: 12433531.
4. Fuentes-Afflick E, Hessel NA. Interpregnancy interval and the risk of premature infants. *Obstet Gynecol*. 2000;95:383-90.
5. Smith GCS, Pell JP. Teenage pregnancy and risk of adverse perinatal outcomes associated with first and second births: population based retrospective cohort study. *BMJ* 2001;323: 476-9.
6. Erickson JD, Bjerkedal T. Interpregnancy interval: association with birth weight, stillbirth, and neonatal death. *J Epidemiol Community Health* 1978;32: 124-30.