

**Research Paper****The Impact of Interpregnancy Interval on Congenital Anomaly**

Authors

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Abstract

Background: A lot of public health investigator have notified that the duration between the delivery and conception of next child (IPI) or the inter birth interval is associated with outcomes of subsequent pregnancy. Early fetal death is loss of conceptions (<16 weeks) gestation in a multifetal gestation. A spontaneous abortion is > 16 weeks - < 24 weeks gestation.

Objective: To evaluate correlation between interpregnancy intervals and congenital anomaly and to found the association between IPI and anomalies caused by folate deficiency.

Methods: Present retrospectively study done at Kamla Raja Hospital, Gajra Raja Medical College, Gwalior (M.P. between 2016 to 2018. All multipara women attending antenatal clinics included in this study. Present study conducted on 190 cases.

Results: 67(35.26%) cases belongs to interpregnancy interval ≤ 12 weeks. Interpregnancy interval 12-24 weeks, 25-35 weeks and > 35 weeks were in 56(29.47%), 25(13.16%) and 42(22.11%) respectively. 34.74% and 34.21% cases belonged to maternal age between 21-25 years and 26-30 years respectively. Maternal age ≤ 20 years and > 30 years were 10% and 20.53% respectively. Majority of cases belonged to gravida 2 i.e. 52.11% followed by Gravida 3 and 4+ were 33.68% cases and 14.21% cases respectively. Maximum patients not having history of prior anomaly (87.89%), only 12.11% cases have history of anomaly. Still birth found in 51.58% cases and still birth not found in 48.42% cases.

Conclusion: Interpregnancy interval has significant association with preterm, low birth weight and gestational age babies. Counselling regarding interpregnancy interval can help in reducing adverse perinatal outcome.

Introduction

A lot of public health investigator have notified that the duration between the delivery and conception of next child (IPI) or the inter birth interval is associated with outcomes of subsequent

pregnancy. Short IPI via maternal depletion syndrome, influences infant, child and maternal mortality as mothers do not revive micro and macronutrients source - IPI cause infecundity.¹

Adverse outcomes compromise preterm birth, perinatal death, IUGR along with maternal morbidity, exclusive breast feeding, increase IPI and had a good impact on infant survival congenital anomalies are between 8-15% perinatal deaths and 13-16% neonatal deaths.^{2,3}

Early fetal death is loss of conceptions (<16 weeks) gestation in a multifetal gestation. A spontaneous abortion is > 16 weeks - < 24 weeks gestation.⁴

In early postpartum period and in late pregnancy women are folate depleted which in turn causes preterm birth and growth restriction. Folate depletion and deficiency cause CVs, GUI, cleft lip and palate, limb defects.^{5,6}

The aim of this study is to evaluate correlation between interpregnancy intervals and congenital anomaly and to found the association between IPI and anomalies caused by folate deficiency.

Material and Methods

Type of study: Retrospective study

Duration of study: From 2016 to 2018

Place of study: Kamla Raja Hospital, Gwalior

We initially saw the IPI and congenital anomaly and then evaluated the folate dependent and folate independent anomaly by IPI.

Most anomalies were NTO's, cleft lip CVS & GUI.

Inclusion Criteria

- All multipara women attending antenatal clinics and delivering in KRH.
- Those anomalies are only taken which were visible externally.

Exclusion Criteria

- Primi para patients.
- Previous history of congenital anomaly.

Methods

History was taken from name, parity, residence, age, history of previous delivery and any drug history intake. Record of previous pregnancy was checked. Investigation like Hb%, blood group, and ultrasonography were also done. Neonates were weighted with weighing machine and examined for congenital anomalies.

Interpregnancy interval were noted and calculated. Pregnancy outcome was noted (still birth, low birth weight for gestational age).

Statistically analysis were applied to analyze between interpregnancy intervals and pregnancy outcomes.

Results

Present study conducted on 190 cases.

Table 1: Distribution of cases according to interpregnancy interval

Interpregnancy interval (weeks)	Number of cases	Percentage
≤ 12	67	35.26
12-24	56	29.47
25-35	25	13.16
> 35	42	22.11

Above table shows that majority of cases belongs to interpregnancy interval ≤ 12 weeks i.e. 67(35.26%) followed by interpregnancy interval 12-24 weeks, 25-35 weeks and > 35 weeks were in 56(29.47%), 25(13.16%) and 42(22.11%) respectively.

Table 2: Distribution of cases according to maternal age

Maternal age	Number of cases	Percentage
≤ 20	19	10
21-25	66	34.74
26-30	65	34.21
>30	39	20.53

Above table depicts that most of the cases belonged to maternal age between 21-25 years and 26-30 years which were 66(34.74%) and 65(34.21%) respectively. Maternal age ≤ 20 years and > 30 years were 19(10%) and 39(20.53%) respectively.

Table 3: Distribution of cases according to gravida

Gravida	Number of cases	Percentage
2	99	52.11
3	64	33.68
4+	27	14.21

In this table, majority of cases belonged to gravida 2 i.e. 99(52.11%) followed by Gravida 3 and 4+ were 64(33.68%) cases and 27(14.21%) cases respectively.

Table 4: Distribution of cases according to history of prior anomaly

Prior anomaly	Number of cases	Percentage
Yes	23	12.11
No	167	87.89

Above table shows that maximum patients not having history of prior anomaly (167 i.e. 87.89%), only 23(12.11%) cases have history of anomaly.

Table 5: Distribution of cases according to still birth

Still birth	Number of cases	Percentage
Yes	98	51.58
No	92	48.42

Above table depicts that still birth found in 98 (51.58%) cases and still birth not found in 92(48.42%) cases.

Discussion

Present retrospectively study done at Kamla Raja Hospital, Gajra Raja Medical College, Gwalior (M.P. between 2016 to 2018. All multipara women attending antenatal clinics included in this study. Present study conducted on 190 cases.

Interpregnancy interval

Majority of cases belongs to interpregnancy interval ≤ 12 weeks i.e. 67(35.26%) followed by interpregnancy interval 12-24 weeks, 25-35 weeks and > 35 weeks were in 56(29.47%), 25(13.16%) and 42(22.11%) respectively.

Study done by Koullali B et al (2017)⁷, they found majority in 12-17 weeks which is 22% and Ekin A et al (2015)⁸ found in their study, majority of cases in 18-23 weeks which is 26.3%.

Maternal age

Most of the cases belonged to maternal age between 21-25 years and 26-30 years which were 34.74% and 34.21% respectively. Maternal age ≤ 20 years and > 30 years were 10% and 20.53% respectively.

Study done by Ekin A et al (2015)⁸, they found majority in 20-34 weeks which is 68.6%. This study is advocated our study.

Gravida

Majority of cases belonged to gravida 2 i.e. 52.11% followed by Gravida 3 and 4+ were 33.68% cases and 14.21% cases respectively.

Coo H et al (2017)⁴ in their study majority of cases belonged to gravida 1 i.e. 49.8% and study done by Ekin A et al (2015)⁸, they also found majority of cases belonged to gravida 1 i.e. 61.9%.

History of Prior Anomaly

Maximum patients not having history of prior anomaly (87.89%), only 12.11% cases have history of anomaly.

Coo H et al (2017)⁴ in their study majority of cases belonged to not having history of prior anomaly i.e. 90.9 and study done by Chen I et al (2014)¹ majority of cases belonged to not having history of prior anomaly i.e. 98.9%. Both the studies are which is very similar to our study.

Still birth

Still birth found in 51.58% cases and still birth not found in 48.42% cases. Study done by Ekin A et al (2015)⁸ in still birth were found in 0.5% only.

Conclusion

Interpregnancy interval has significant association with preterm, low birth weight and gestational age babies. Counselling regarding interpregnancy interval can help in reducing adverse perinatal outcome. It reduce burden and cost of society and health care system. Interpregnancy interval can be prevented by use of foate supplements and family planning method between consecutive pregnancies.

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