Comment on the maternal and neonatal outcomes of gestational diabetes

Dear Editor,
We read the article titled "maternal and neonatal outcomes of gestational diabetes: A retrospective cohort study from Southern India."[1] This article tries to address an important research question pertaining to outcomes of gestational diabetes mellitus (GDM). The authors have attempted to establish the risk of adverse outcome of GDM, and they have chosen the cohort design. We have few methodological concerns.

The objective mentioned in the article "to study the frequency of occurrence of maternal and fetal outcomes among GDM patients" can be achieved using a descriptive study design. If authors were interested in identifying the risk factors for adverse outcomes, analytical study design like cohort design is warranted. Though the study design was mentioned as retrospective cohort study, the research hypothesis was not mentioned anywhere in the article. Furthermore, for analytical approach, sample size calculations for identifying important risk factors were not mentioned. Hence, many of the risk factors might have been missed simply because of lack of statistical power due to small sample size.

The selection of study subjects is an important step in any research, more so with a cohort study design. The authors have mentioned that they selected 60 subjects with exposure (GDM) and 120 subjects without GDM. The rationale for selecting 120 non-GDM patients and the sampling method is not clear. Instead of selecting few individuals from the original cohort, if the information was available for all individuals, including all patients would have provided sufficient statistical power and also generalizability of the findings. Without a random sampling method, calculation of inferential statistics should not be attempted, and hence the study findings cannot be generalized.

Information on important parameters such as the total population, birth rate, and number of pregnant women in the study setting of Local Self-Government Unit (Ottoor Panchayat) would have helped to understand the study setting better. The authors have simply mentioned that 60 subjects with GDM and 120 subjects without GDM are chosen. Definition of exposure status was not explicitly mentioned; whether any diagnostic test for GDM was performed at the baseline or it was self-reported. If diagnostic tests were carried out, mentioning the criteria for GDM would have been better. The outcomes of the study such as progression to type 2 diabetes, glycemic status, and delivery

particulars were all ascertained by means of telephonic interview. After how long these interviews were conducted and whether it was uniform in both the groups is not clear. If these interviews were conducted after the follow-up period of 4 years, there could be a potential recall bias. One of the outcomes, progression to type 2 diabetes mellitus (DM) was ascertained using telephonic interview only. Annual medical examinations were conducted only among GDM patients; it is not clear from the study whether non-GDM patients were also assessed annually for progression to type II diabetes. If this was not done, the risk of progression to type 2 DM in non-GDM group would have been grossly underestimated.

The authors have mentioned that SPSS version 16 (IBM, NY, USA) version 16 was used for analysis. However, the authors have reported adjusted relative risk (RR) in multivariate analysis. To the best of our knowledge, SPSS software does not give adjusted RR in multivariate logistic regression.[2] Whether, adjusted RR was derived from adjusted odds ratio is not clear. Furthermore, the criteria for including the exposure variables in the multivariate model and the number of variables included were not mentioned.

In the results section, the number of participants who refused telephonic interview or those who were not been able to contact is not mentioned. The mean age of the participants across the two groups is not reported in the Table 1. Age is an important confounder with respect to outcomes of GDM. If the two groups differ significantly with respect to age, then age variable should be included in the model. The baseline characteristics such as education and occupation are compared between the two groups using Chi-square test. However, Chi-square test should not be used if any of the cells have a value of 0.[3] Few outcomes such as premature delivery, stillbirth, abortions, and cesarean section were reported only for GDM group, thus unable to compare with non-GDM patients. For example, the authors claim a higher rate of cesarean section (32.8%) among GDM group. In a state like Kerala where cesarean section rate is already high (30.1%),[4] it is not possible to draw conclusions from one group alone. It would have been better if authors reported unadjusted risk estimates before proceeding with the adjusted analysis.

GDM is definitely an important public health issue and needs policies to tackle it. However, GDM is not the only risk factor for type 2 DM and controlling GDM to tackle type 2 DM may not be an effective strategy for controlling type 2 DM. This study does not bring out the increased risk of neonatal mortality due to GDM. However, the authors conclude that neonatal facilities need to be improved to tackle neonatal mortality due to GDM. This study had very important objective of studying various maternal and neonatal outcomes among GDM in a cohort design. However, the results of the study have to be interpreted with caution due to above-mentioned concerns.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

Marie Gilbert Majella[1],
Bijaya Nanda Naik[1],
T. Mahalakshmy[1],
Palanivel Chinnakali[1]

[1]*Department of Preventive and Social Medicine, Jawaharlal Institute of Postgraduate Medical Education and Research, Puducherry, India*

Address for correspondence: Dr. Marie Gilbert Majella, Department of Preventive and Social Medicine, Jawaharlal Institute of Postgraduate Medical Education and Research, Puducherry - 605 006, India. E-mail: gilbert2691@gmail.com

References

1. Sreelakshmi PR, Nair S, Soman B, Alex R, Vijayakumar K, Kutty VR. Maternal and neonatal outcomes of gestational diabetes: A retrospective cohort study from Southern India. J Family Med Prim Care 2015;4:395-8.

2. IBM Does IBM SPSS Statistics offer Mantel-Haenszel Adjusted Relative Risk Estimates? - United States. Available from: http://www-01.ibm.com/support/docview.wss?uid=swg21481191. [Last cited on 2015 Nov 09].

3. Gravetter FJ, Wallnau LB. Statistics for the Behavioral Sciences. Brockport Bookshelf. Book 26;2012. Available from: http://digitalcommons.brockport.edu/bookshelf/36. [Last accessed on 2016 Jan 18].

4. International Institute for Population Sciences (IIPS) and Macro International. 2008. National Family Health Survey (NFHS-3), India, 2005-06: Kerala. Mumbai: IIPS; 2008.

Access this article online	
Quick Response Code:	**Website:** www.jfmpc.com
	DOI: 10.4103/2249-4863.184666

How to cite this article: Majella MG, Naik BN, Mahalakshmy T, Chinnakali P. Comment on the maternal and neonatal outcomes of gestational diabetes. J Family Med Prim Care 2016;5:190-1.