

A CROSS-SECTIONAL STUDY TO ASSESS THE COMPLIANCE TO IRON FOLIC ACID TABLETS AMONG WOMEN ATTENDING ANTENATAL CLINIC

SIVA KEERTHIKA S^{id}, SANTOSH BIRADAR^{id}, VINOD S KAMBLE^{id}, SHRINIVAS REDDY B*^{id}

Department of Community Medicine, ESIC Medical College, Kalaburagi, Karnataka, India.

*Corresponding author: Shrinivas Reddy B; Email: reddymrmcg@gmail.com

Received: 03 December 2023, Revised and Accepted: 04 May 2024

ABSTRACT

Objective: As anemia is highly prevalent among pregnant women, the government of India took the initiative to start prophylactic iron folic acid tablets (IFA) to reduce its prevalence. Hence, this study was done with the objectives to assess compliance to IFA among antenatal women and to identify the associated factors.

Methods: The present study was a cross-sectional study conducted among 100 women attending antenatal clinics. A pre-designed semi-structured questionnaire was used to collect the data. The data were analyzed for frequency, percentage, and Chi-square.

Results: The compliance to IFA was found to be 46.15% and was significantly more in anemic pregnant women.

Conclusion: The prevalence of compliance to IFA tablets was only 46.15%. Hence, counseling and awareness to be done about the importance of taking IFA tablets regularly during the antenatal period, so that compliance can be improved.

Keywords: Iron-folic acid tablets, Antenatal women, Compliance, Awareness, Prevalence.

© 2024 The Authors. Published by Innovare Academic Sciences Pvt Ltd. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>) DOI: <http://dx.doi.org/10.22159/ajpcr.2024v17i7.50042>. Journal homepage: <https://innovareacademics.in/journals/index.php/ajpcr>

INTRODUCTION

As there is a high prevalence of anemia among antenatal women, India started the National Nutritional Anemia Prophylaxis Program in 1977. In this program, 100 mg of ferrous iron and 500 mcg of folic acid tablets are distributed to the antenatal women [1,2]. Despite all these efforts, still anemia is more prevalent (52.2%) among antenatal women [3,4]. The success of all these interventions depends on compliance to Iron-folic acid tablets (IFA) [5,6].

Hence, this study was done with the objective to assess the compliance to IFA tablets among women attending the antenatal clinic of Urban Health Centre, Kalaburagi.

METHODS

The study was a health facility-based cross-sectional study conducted among pregnant women attending antenatal clinic over duration of 3 months. The study area was Urban Primary Health Centre, Maktampur, Kalaburagi district of Karnataka, India.

Those pregnancies confirmed by urine pregnancy test or pelvic ultrasonography and antenatal women who were willing to participate in the study were included in the study. Antenatal women who were not interested to participate were excluded from the study.

The sample size was calculated using the Cochran formula $4pq/d^2$ with the prevalence of anemia among urban pregnant women as 37.3%, according to NFHS-5 Karnataka [7].

Sample size(n) = $4pq/d^2 = (4)(0.373)(1-0.373)/(0.1)^2 = 0.93/0.01 = 93$

The sample size was 93 which was rounded off to 100 antenatal women.

A pre-designed pre-tested semi-structured interviewer-administered questionnaire was used to collect the data. Anonymity and confidentiality were maintained. Informed consent was obtained.

The collected data were entered in Microsoft Excel and analyzed for frequency, percentage, and Chi-square test. $p < 0.05^*$ was considered statistically significant.

Ethical considerations

Approved (ESICMC/GLB/IEC/36/2023).

Operational definitions

Medication non-compliance missing two or more doses consecutively in the last 15 days was considered as non-compliance [5].

RESULTS AND DISCUSSION

Among 100 antenatal women, most women were between 20 and 29 years of age (80%), literate (97%), belonged to joint family (67%), and were from lower socioeconomic status (45%) (Table 1).

In the present study, majority (91%) were consuming IFA tablets once daily (82.41%) and were availing IFA tablets from government hospitals (73.63%) (Table 2).

In the current study, 76% of women were anemic (Table 3).

Majority (53.85%) of the woman had missed more than one dose in past 15 days. The most common reason given was, no harm to skip tablets sometimes (32.65%) followed by forgetfulness (28.57%) (Table 4).

Compliance was more in pregnant women of age >30 years (63.63%), belonging to joint family (47.54%), and lower middle class (53.33%) (Table 5).

Compliance was more in anemic (52.11%) pregnant women and association was statistically significant.

Compliance was better in women who had more than three antenatal visits (56.41%) and who were taking IFA tablets twice a day (56.25%) but association was not statistically significant (Table 6).

Table 1: Sociodemographic details of the study participants (n=100)

Sociodemographic details	n
Age group (years)	
18-19	6
20-29	80
>30	14
Literacy	
Literate	97
Illiterate	3
Type of family	
Joint	67
Nuclear	33
Socioeconomic status	
Lower class	45
Lower middle class	31
Middle class	24

Table 2: Iron-folic acid tablet profile of the study population

IFA tablet profile	n (%)
Intake of IFA (n=100)	
Yes	91 (91)
No	9 (9)
Source of IFA (n=91)	
Government	67 (73.63)
Private	6 (6.59)
Both	18 (19.78)
Frequency of IFA (n=91)	
One	75 (82.41)
Two	16 (17.59)

IFA: Iron-folic acid tablets

Table 3: Hemoglobin status of the study population (n=100)

Hemoglobin status	n
Non-anemic	24
Anemic	76

Table 4: Compliance to iron-folic acid tablets among the study participants

Compliance to IFA	n (%)
Missed IFA dose (n=91)	
Yes	49 (53.85)
No	42 (46.15)
Reasons for missing (n=49)	
No harm to skip sometimes	16 (32.65)
Forget fullness	14 (28.57)
Side effect	7 (14.28)
Was sick recently	7 (14.28)
Running out of supplement	5 (10.22)

IFA: Iron-folic acid tablets

The present study revealed that 46.15% of the antenatal women were compliant with IFA, whereas in similar studies conducted by Choudhuri *et al.* [8] (52.5%), Debi *et al.* [9] (81.74%) Mithra *et al.* [10] (67.4%), Pal *et al.* [11] (62%), Deori *et al.* [12] (77.1%) the compliance was found to be higher than the present study.

In the current study, we found that the main reason given for skipping IFA tablets was no harm to skip it sometimes (32.65%), followed by forgetfulness (28.57%), whereas the study conducted by Choudhuri *et al.* [8], the main reasons cited were a side effect of the tablets (25.09%) followed by forgetfulness (28.07%). The study conducted by

Table 5: Association between sociodemographic details and compliance to iron-folic acid tablets (n=91)

Sociodemographic details	Compliance, n (%)	Non-compliance, n (%)	χ^2	p-value
Age				
18-29	35 (43.75)	45 (56.25)	1.53	0.3
>30	7 (63.63)	4 (36.37)		
Type of family				
Nuclear	13 (43.33)	17 (56.67)	0.14	0.7
Joint	29 (47.54)	32 (52.46)		
Socioeconomic status				
Middle class	6 (31.57)	13 (68.43)	2.28	0.3
Lower middle class	16 (53.33)	14 (46.67)		
Lower class	20 (47.61)	22 (52.39)		

Table 6: Association between baseline variables and compliance to iron-folic acid tablets (n=91)

Baseline variables	Compliance, n (%)	Non-compliance, n (%)	χ^2	p-value
Hemoglobin status				
Anemic	37 (52.11)	34 (47.89)	4.61	0.03*
Non-anemic	5 (25.00)	15 (75.00)		
Number of ANC visit				
<3	20 (38.46)	32 (61.54)	2.88	0.08
≥3	22 (56.41)	17 (43.59)		
IFA tablets intake per day				
One	33 (44.00)	42 (56.00)	0.79	0.3
Twice	9 (56.25)	7 (43.75)		

IFA: Iron-folic acid, *Compliance was more in anemic (52.11%) pregnant women and association was statistically significant.

Mithra *et al.* [10]; the main reason was forgetfulness (48.8%) followed by side effects (27.6%).

Our study did not observe any significant association between IFA compliance and sociodemographic factors such as age of woman, type of family, socioeconomic status, number of ANC visits, and frequency of IFA tablets. Whereas similar studies conducted have shown significant association. Birhanu *et al.* [13] reported that IFA compliance was significantly more in participants from the urban region, who had early initiation of antenatal checkups or a higher number of ANC visits. The study by Mithra *et al.* [10], showed compliance with IFA tablets was found to be significantly associated with the increase in age and birth order.

Limitations of the study

This study was health facility-based, which included only pregnant women who had ANC contact. Hence, the study cannot be generalized.

CONCLUSION

The present study observed that only 46.15% of the pregnant women were compliant to the IFA tablet supplement given to them. Hence, awareness to be created about the importance of taking IFA tablets regularly during ANC period, and counseling to be given so that compliance can be improved.

ACKNOWLEDGMENT

The authors would like to acknowledge the study participants for their participation in this study.

AUTHORS' CONTRIBUTION

Dr. Siva Keerthika, Dr. Santosh Biradar, Dr. Vinod S Kamble, and Mr. Shrinivas Reddy were responsible for the conception of the research

idea, study design, data collection, analysis, interpretation, and supervision. Dr. Siva Keerthika participated in the data collection, entry and analysis, and manuscript write-up. All authors have read and approved the final manuscript.

CONFLICTS OF INTEREST

All authors declare that they do not have any conflicts of interest.

FUNDING

Nil.

REFERENCES

- National Nutrition Anemia Prophylaxis Programme. Available from: <https://www.nihfw.org/nationalhealthprogramme/nationalnutritionanemiaphylaxisprogramme.html> [Last accessed on 2023 May 15].
- International Institute for Population Sciences, ICF. National Family Health Survey (NFHS-5), 2019-20: India. Mumbai: International Institute for Population Sciences.
- Al-Gawhari FJ. Preparation of ferrous sulfate microcapsules as a sustained release dosage forms. *Int J Appl Pharm.* 2016;8(3):16-9.
- Galloway R, McGuire J. Determinants of compliance with iron supplementation: Supplies, side effects, or psychology? *Soc Sci Med.* 1994;39(3):381-90. doi: 10.1016/0277-9536(94)90135-x, PMID: 7939855
- Rohmatin E, Krisjayanti N, Yulastuti S, Mintarsih W, Sahlan M. Propolis as an alternative to increase hemoglobin levels in anemic adolescent girls. *Int J Appl Pharm.* 2022;14(3):129-31. doi: 10.22159/ijap.2022.v14s3.27
- Cramer JA, Roy A, Burrell A, Fairchild CJ, Fuldeore MJ, Ollendorf DA, et al. Medication compliance and persistence: Terminology and definitions. *Value Health.* 2008;11(1):44-7. doi: 10.1111/j.1524-4733.2007.00213.x, PMID: 18237359
- International Institute for Population Sciences, ICF. National Family Health Survey (NFHS-5), 2019-20: Karnataka. Mumbai: International Institute for Population Sciences.
- Choudhuri P, Debbarma A, Debbarma S, Reang T. Compliance to iron and folic acid tablets among pregnant women attending antenatal clinic in Agartala government medical college. *J Family Med Prim Care.* 2022;11(6):2763-7. doi: 10.4103/jfmpe.jfmpe_1914_21, PMID: 36119349
- Debi S, Basu G, Mondal R, Chakrabarti S, Roy SK, Ghosh S. Compliance to iron-folic-acid supplementation and associated factors among pregnant women: A cross-sectional survey in a district of West Bengal, India. *J Family Med Prim Care.* 2020;9(7):3613-8. doi: 10.4103/jfmpe.jfmpe_392_20, PMID: 33102338
- Mithra P, Unnikrishnan B, Rekha T, Nithin K, Mohan K, Kulkarni V, et al. Compliance with iron-folic acid (IFA) therapy among pregnant women in an urban area of south India. *Afr Health Sci.* 2013;13:880-5.
- Pal PP, Sharma S, Sarkar KT, Mitra P. Iron and folic acid consumption by the antenatal mothers in rural area of India in 2010. *Int J Prev Med.* 2013;4(10):1213-6. PMID: 24319564
- Deori TJ, Ramaswamy G, Jaiswal A, Loganathan V, Kumar R, Mahey R, et al. Compliance with iron folic acid (IFA) tablets and associated factors among pregnant women attending ante-natal care clinic at Sub District Hospital, Ballabgarh. *J Family Med Prim Care.* 2021;10(5):2006-11. doi: 10.4103/jfmpe.jfmpe_1742_20, PMID: 34195139
- Birhanu MT, Birarra KM, Mekonnen AF. Compliance to iron and folic acid supplementation in pregnancy, North West Ethiopia. *BMC Res Notes.* 2018;11(1):345. doi: 10.1186/s13104-018-3433-3, PMID: 29848380