IJBCP International Journal of Basic & Clinical Pharmacology

Research Article

An audit of iron therapy in patients with iron deficiency anemia in a tertiary care hospital

Anusha Natarajan[1]*, Isabella Topno[2]

[1]Department of Pharmacology, Jawaharlal Institute of Postgraduate Medical Education and Research, Puducherry, India, [2]Department of Pharmacology, Pondicherry Institute of Medical Sciences, Puducherry, India

*Correspondence to:
Dr. Anusha Natarajan,
Email: anushanatarajan29@gmail.com

ABSTRACT

Background: Iron deficiency anemia (IDA) is a major nutritional problem globally, which is especially true in the developing countries like India. Even though the treatment is simple and effective, there is a high prevalence of IDA. The reason for this is partly due to non-compliance of the patients and partly due to ineffective or incomplete treatment by the physicians. Hence, the present study was done with the objective to study the treatment pattern in patients with IDA.
Methods: This retrospective observational study was conducted in the Medical Records Department, Pondicherry Institute of Medical Sciences (PIMS), Puducherry for a period of 1-year with a sample size of 100 patients. Patients of all ages and either sex diagnosed to have mild to severe IDA were included in the study. The following data like: demographic details, hemoglobin, drugs used to treat the anemia, duration of treatment were obtained. The data will be presented as descriptive statistics.
Results: Out of the 100 patients scrutinized 57% had severe IDA, 39% moderate IDA, and 4% had mild IDA. Of the 100 patients, 71% were females and 29% were males. For 14% of the patients, no treatment was given and for 19% of the patients treatment was given but the duration of treatment was not mentioned.
Conclusions: The results of the present study showed that majority of the patients with IDA did not receive the recommended WHO treatment. The present study shows that even though the treatment of a common nutritional disorder-IDA is simple and effective, the prevalence of the same is high, and the majority of the patients are being undertreated. Patients should also be educated about the implications of the disorder and the importance of its treatment.

Keywords: Anemia, Iron therapy, Audit, Treatment

INTRODUCTION

Iron deficiency anemia (IDA) is a major nutritional problem globally, which especially is true in the developing countries like India. India is one of the countries with a very high prevalence of anemia in the world. Almost 58% of pregnant women in India are anemic, and it is estimated that anemia is the underlying cause for 20-40% of maternal deaths in India. India contributes to about 80% of the maternal deaths due to anemia in South Asia.[1]

IDA is associated with worsened quality of life, impaired physical, and cognitive performance.[2,3] Hence, effective treatment of IDA is extremely necessary.

Even though the treatment is simple and effective, there is a high prevalence of IDA. The reason for this is partly due to non-compliance of the patients and partly due to ineffective or incomplete treatment by the physicians. Hence, the present study was undertaken with the following objective.

Objective

To study the treatment pattern in patients with IDA in a tertiary care hospital.

METHODS

- Retrospective observational study
- Sample size: 100 patient records (inpatients and outpatients)
- Place: Medical Records Department of a tertiary care hospital in Pondicherry

- Duration: 1 year (January-December 2014)
- Patients of all ages and either sex diagnosed to have mild to severe IDA were included in the study
- The following data like: demographic details, hemoglobin, drugs used to treat the anemia, duration of treatment were obtained. The data will be presented as descriptive statistics
- Data are expressed as descriptive statistics.

RESULTS

The results of our study are as follows:

Of the 100 patients, 71% were females and 29% were males (Figure 1).

Out of the 100 patients scrutinized 58% had severe IDA, 36% moderate IDA and 6% had mild IDA. The anemia classification is based on hemoglobin levels according to the WHO (Figure 2).

For 14 patients, no treatment was given. Among the 14, 64% had moderate IDA, 29% had severe IDA, and 7% had mild IDA (Figure 3).

Of the 100 patients, 19 patients were given treatment but the duration of treatment was not mentioned. Among them,
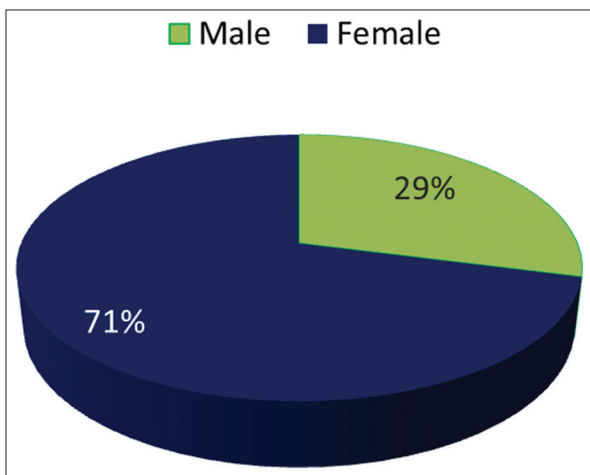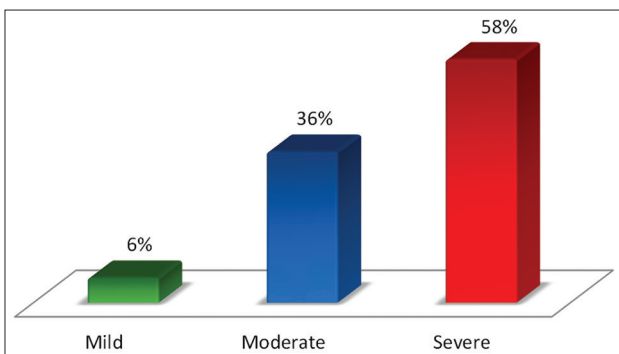
42% of each had moderate and severe IDA and 16% of them had mild IDA (Figure 4).

Out of the 54 patients who had severe IDA only 5.56% of them received the correct dose of the drug. Similarly of the 32 patients who had mild and moderate IDA only 40.63% of the patients received the correct dose (Figure 5).

All the patients were advised for follow-up visit. Of the 100 patients only 27% of them came for follow-up visits, the remaining 73% of them did not come for follow-up (Figure 6).

DISCUSSION

IDA is a common problem worldwide, and doctors of all specialties need to be competent in its treatment.[4] This is the first study to analyze the treatment pattern in patients having IDA. In our study, majority of the patients were female (71%) and they were more than 15 years of age. This could be attributed to the low nutrition intake in the females and menstrual blood loss that occurs every month. No pregnant females were encountered in our study.
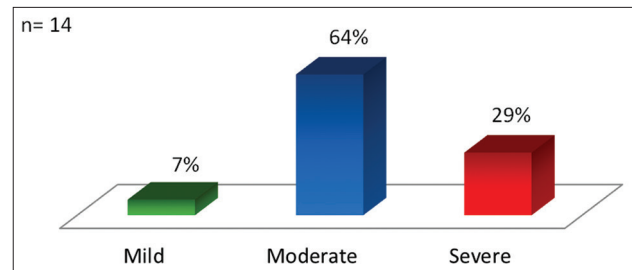

Figure 1: Total number of patients.

Figure 2: Type of anemia.

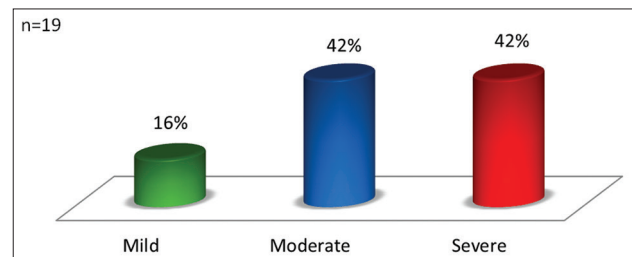**Figure 3: No treatment given.**

Figure 4: Treatment duration not mentioned.
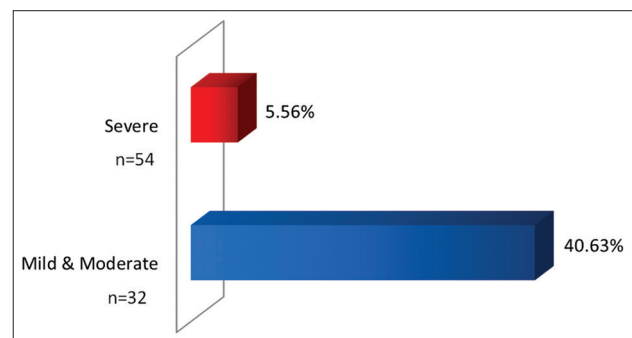

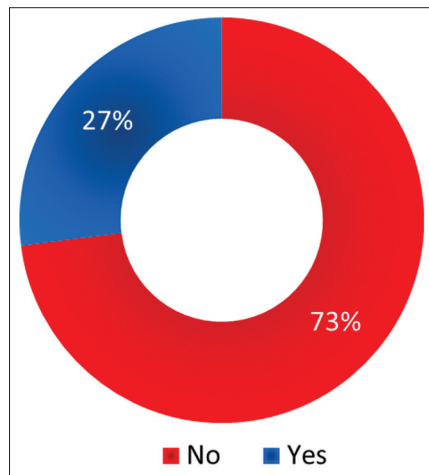**Figure 5: Patients who received correct dose of drug.**

Figure 6: Follow-up by patients.

In our study, we found that majority of the patients had severe IDA - 58%, followed my moderate IDA (36%). In the severe and moderate category of IDA female patients were more than male patients. According to WHO classification of anemia based on hemoglobin concentration, hemoglobin level of <8 g/dl is said to be severe IDA.[5]

In our study, we found out that out of the 100 patients, 14 patients did not receive any form of treatment for their IDA. Among those 14 patients, 29% of the patients had severe IDA, 64% of the patients had moderate IDA, and 7% of the patients had mild IDA. For severe anemia, the WHO treatment guideline is: 120 mg of ferrous sulfate plus 400 µg of folic acid every day for a period of 3-month.[6] For mild and moderate anemia, the WHO treatment guideline is: for adults - 150-200 mg of elemental iron for 1 month. This should be continued for 3 months to replenish the stores.[6] After normalization of hemoglobin level.

While treating patients with IDA, it is important to mention the duration of treatment, as it is necessary not only to correct the deficiency state but also to replenish the iron stores. In our study, we found that 19 patients were given treatment with ferrous sulfate but the duration for which they have to take the iron tablets were not mentioned. This will lead to under treatment of the deficiency state, and the patients may develop IDA again.

Among the 54 patients who had severe IDA only 5.56% of the patients received the correct dose of iron and for the correct duration of time. Moreover, among the 32 patients who had moderate IDA only 40.63% of patients got the right treatment. This shows that only a minority of the patients received the correct treatment. The probable reason for this could be that the junior residents and interns who treat the patients are not updated with the treatment guidelines. The other possible reason could be inadequate documenting in the patients' files. Hence, more emphasis has to give to documentation in the patients' records.

Follow-up is mandatory in patients getting treated for IDA as the rise in hemoglobin levels should be checked periodically to monitor the effectiveness of the treatment. In the case of mild to moderate anemia, hemoglobin has to be checked at the end of 1st month of treatment and thereafter every 3 months for 1 year. And in the case of severe IDA, follow-up has to be done at 1 week, 4 weeks, at the end of 3 months and thereafter every 3 months for 1 year.[6] In our study, only 27% of the patients reported for regular follow-up. This reflects the lack of knowledge among the patients with IDA. Hence, proper health education has to be provided for continued medication even if hemoglobin has been normalized and increase intake of high iron content diet. Patients should be counseled for treatment adherence and regular follow-up. An alternative method can be adopted where the patient can be reminded by a phone call for a follow-up visit.

REFERENCES

1. Ezzati M, Lopez AD, Rodgers AA, Murray CJ. Comparative Quantification of Health Risks: Global and Regional Burden of Disease Attributable to Selected Major Risk Factors. Geneva, Switzerland: World Health Organization; 2004.
2. WHO, UNICEF, UNU. Iron deficiency anemia: assessment, prevention, and control. A Guide for Programme Managers. WHO/NHD/01.3. Geneva: World Health Organization; 2001. Available at http://www.who.int/nutrition/publications/en/ida_assessment_prevention_control.pdf. Accessed 17 July 2015.
3. Reinisch W, Staun M, Bhandari S, Muñoz M. State of the iron: how to diagnose and efficiently treat iron deficiency anemia in inflammatory bowel disease. J Crohns Colitis. 2013;7(6):429-40.
4. Taylor S, Rampton D. Treatment of iron deficiency anemia: practical considerations. Pol Arch Med Wewn. 2015;125(6):452-60.
5. WHO. Haemoglobin concentrations for the diagnosis of anaemia and assessment of severity. Vitamin and Mineral Nutrition Information System. Geneva: World Health Organization; 2011. Available at http://www.who.int/vmnis/indicators/haemoglobin.pdf. Accessed 14 July 2015.
6. Stoltzfus RJ, Dreyfuss ML. Guidelines for the Use of Iron Supplements to Prevent and Treat Iron Deficiency Anemia. Geneva: World Health Organization; 1998.