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Editorial

Biochemistry Section

Correspondence: Iron Deficiency and Hypoferritinemia in Patients with Subclinical Hypothyroidism: A Retrospective Observational Study

ANITA DEEPAK DESHMUKH[1], MADHURI ABHAY JAGTAP[2]

Keywords: Iron, Ferritin, TSH

Dear Sir,

We read the original article "Iron Deficiency and Hypoferritinemia in Patients with Subclinical Hypothyroidism (SH): A Retrospective Observational Study" by D. Shiva Krishna et al., published in June 2024 [1]. This study concluded that there is a significant association between SH, hypoferritinemia, and iron deficiency, suggesting that before progressing to Overt Hypothyroidism (OH), it is crucial to assess the ferritin and iron status of patients with SH.

This article is quite informative, and by assessing ferritin and iron levels, it could be helpful in monitoring the progression of the condition from SH to overt hypothyroidism. However, the article does not mention haemoglobin levels, which are a fundamental indicator of anaemia. Haemoglobin levels should be measured because individuals with thyroid dysfunction may have low iron levels that impact haemoglobin levels. Additionally, they may have decreased folate and vitamin B12 levels, which have been found in up to 25% of patients [2]. The impact of the study would have been more promising if estimations of vitamin B12 and folic acid had been included, as deficiencies in vitamin B12 or folate also affect SH [3].

Another key parameter required for thyroid synthesis is iodine, which was not estimated by the authors. Both iodine deficiency and excess intake may lead to thyroid dysfunction. Since 90% of ingested iodine is excreted in urine, it is considered a sensitive marker of current iodine intake [4]. Iron deficiency may inhibit iodine incorporation into thyroglobulin and the coupling of iodothyronine to form thyroid hormone by reducing the activity of Thyroid Peroxidase (TPO), an iron-dependent enzyme [5].

Author's response: The present study is a retrospective observational study. Haemoglobin data was not available for all SH patients. Additionally, only a small number of SH patients have data on vitamin B12 and folic acid; thus, folic acid and vitamin B12 data are excluded from the results. None of the patients have had iodine measurements; hence, iodine measurement results were not included in the data.

In this article's discussion, under reference number 32, the study mentioned was conducted in pregnant women. Therefore, it cannot be compared with this study, as the subject age considered is between 48 and 52.

Author's response: Although the age groups are different, the prevalence of SH in pregnant women is 5-10%. Routine testing of ferritin and iron status may be helpful for the early detection and prevention of anaemia in pregnant women.

Corrections are needed in some sentences, as they reflect inaccurate interpretations.

1) "Approximately, one-third of SH cases are not asymptomatic, but their TSH levels rise with a significant titer of thyroid autoantibodies."

Author's response: Yes. It should be: "Approximately one-third of SH cases are asymptomatic, but their TSH levels rise with a significant titer of thyroid autoantibodies."

2) "Consequently, certain types of anaemia, such as macrocytic and normocytic anaemia, stem from erythropoietin production, bone marrow suppression and simultaneous deficiencies in iron, vitamin B12, or folate that can result from thyroid dysfunction."

Author's response: Yes, it should be: "Consequently, certain types of anaemia, such as macrocytic and normocytic anaemia, stem from erythropoietin production, bone marrow suppression, and simultaneous deficiencies of iron, vitamin B12, or folate that can result from thyroid dysfunction."

3) "Hence, the present study was conducted to evaluate biochemical indicators of ferritin and iron in SH patients."

Author's response: Yes, it should be: "Hence, the present study was conducted to evaluate biochemical parameters such as ferritin and iron status in SH patients."

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PARTICULARS OF CONTRIBUTORS:
1. Associate Professor, Department of Biochemistry, Dr. D. Y. Patil Medical College, Hospital and Research Center, Pimpri, Pune, Maharashtra, India.
2. Assistant Professor, Department of Biochemistry, Dr. D. Y. Patil Medical College, Hospital and Research Center, Pimpri, Pune, Maharashtra, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:
Dr. Madhuri Abhay Jagtap,
Department of Biochemistry, Dr. D. Y. Patil Medical College Hospital and Research Center, DPU, Pimpri, Pune, Maharashtra, India.
E-mail: madhuri.jagtap@dpu.edu.in

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