

**PREVALENCE AND PATTERN OF ANAEMIA IN NON PREGNANT HYPOTHYROID WOMEN**Dr. Susan D. P.\*<sup>1</sup>, Dr. K. R. Mukilarasi<sup>2</sup> and Dr. Mary Lilly

Postgraduate, Department of Pathology.

\*Corresponding Author: Dr. Susan D. P.

Postgraduate, Department of Pathology.

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**ABSTRACT**

Anaemia is an important, common clinical condition in which the number of red blood cells or the hemoglobin concentration within them is lower than normal. It is often seen accompanying thyroid diseases. It is diagnosed in patients with hypothyroidism and it is often the first sign. In this study, the Hb level of 63 women with hypothyroidism will be investigated to study the prevalence of anaemia and its morphological pattern in hypothyroid women.

**KEYWORDS:** Anaemia, hypothyroidism, microcytic anaemia.**INTRODUCTION**

Anaemia is one of the common disorders affecting Indian population which may be further influenced by hypothyroidism. The prevalence of hypothyroidism differs from country to country and ranges from 2-5% of the population all over the world.<sup>[1]</sup> Thyroid disorders affect females more than males.<sup>[1,2,3,4]</sup> Thyroid hormones are essential for the normal development, differentiation, metabolic balance, and physiological function of virtually all tissues.<sup>[5]</sup> and thyroid function disorders are among the most common endocrine diseases.<sup>[6,7,8,9]</sup> Thyroid disorders are associated with haematological abnormalities and anaemia is the most prevalent disorder.<sup>[1,10,11,12,13]</sup> Anaemia has been defined in 20-60% of the patients with hypothyroidism.<sup>[3,4,11]</sup> Hypothyroidism can cause a wide variety of haematological disorders and anaemia could be its first manifestation. Numerous mechanisms are involved in the pathogenesis of these anaemias that can be Microcytic, Macrocytic and Normocytic. We designed this study to investigate the prevalence of anaemia and its morphological pattern in Non-pregnant hypothyroid women in urban population.

**MATERIALS & METHODOLOGY**

The present study is a Cross – Sectional conducted at Sree Balaji Medical College & Hospital from October 2019 – January 2020. Details of hypothyroid patients were collected from the Dept of biochemistry, Central lab. A total number of 80 hypothyroid women were found. Inclusion & Exclusion criteria: Patients who were diagnosed with hypothyroidism were evaluated for anemia excluding pregnant women, women with H/O

malignancy and CKD. Clinical history and blood count with smear study were analysed. 17 patients were excluded as they didn't satisfy the inclusion criteria. A total of 63 patients were studied. Demographic information (name, sex, age, etc.), past history of all enrolled subjects were analysed. Statistics analysis was used to describe the baseline characteristics. The data collected was statistically analysed. Complete blood count (CBC) was analysed in automated analyser and peripheral smears were done by the Leishman stain.

**RESULTS**

In this study, blood parameters of 63 women with hypothyroidism were investigated. Hb level for defining the anaemia in non pregnant female were <12 g/dL. Out of 63 women, 50 women had Hb < 12 g%. Anaemia was found in 80% of women. Results were classified according to the grade, pattern and age distribution. Grading of anaemia: Mild (11-11.9 g/dl), Moderate (8-10.9 g/dl) and severe (<8 g/dl)

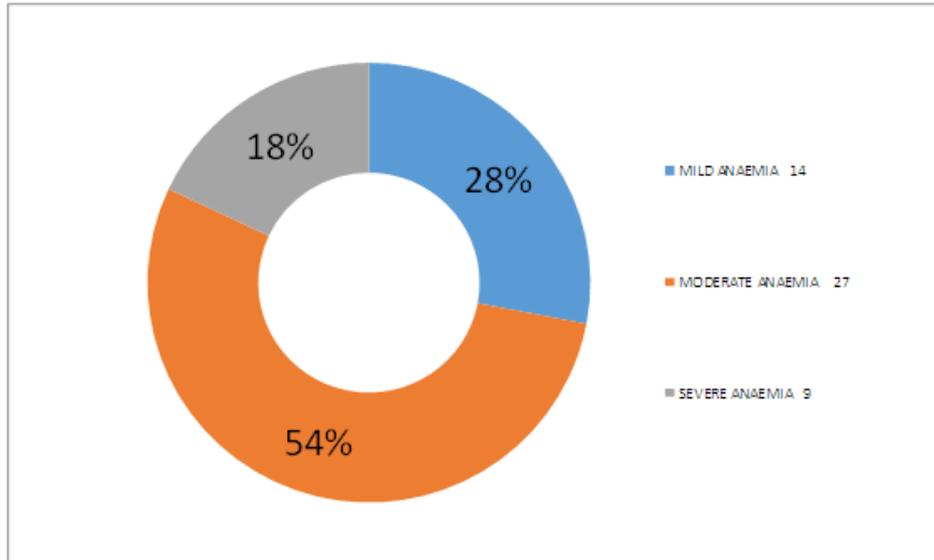


Figure 1: Shows percentage of hypothyroid women with mild, moderate and severe anaemia.

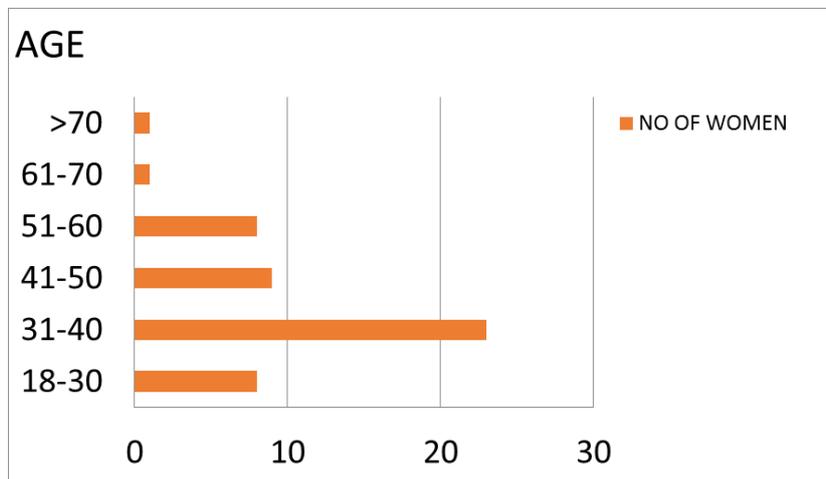


Figure 2: Shows age wise distribution of anaemia among the hypothyroid women.

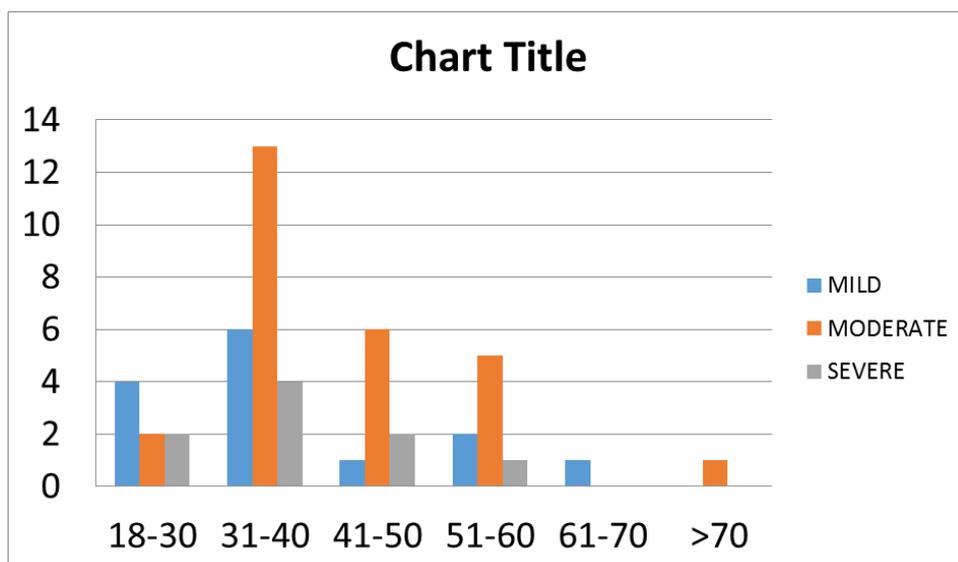


Figure 3: Shows Age wise distribution of mild, moderate and severe anaemia among hypothyroid women.

## DISCUSSION

Hypothyroidism is a common disease with varying frequency between countries. As decreased thyroid hormone adversely affects erythropoiesis, anemia develops in hypothyroidism. In India prevalence of iron-deficiency anaemia among women is high because of poor iron intake, poor bioavailability of iron and blood loss during menstruation. Chronic blood loss and hook worm infestation also contribute to this. In our study anaemia and hypothyroidism were more prevalent in women between 31- 40 yrs of age. This correlated with study done by Sreelatha kumari et.al in Tiruvananthapuram, Kerala.<sup>[16]</sup> Periasamy et al also reported high prevalence in the same age group. In our study most hypothyroid women were found to have moderate anaemia which is 42 %. This correlated with several studies .One of which is done by Jaya gosh et al<sup>[15]</sup> in Kolkata where 54% of women had moderate degree of anaemia. Coming to the morphology of anaemia in our study, 66% was Microcytic Hypochromic, 22% was macrocytic and 12 % was Normocytic normochromic. This correlated with Periasamy et al<sup>[14]</sup> where he reported 58% MCHC n women of Chithabaram.

## CONCLUSION

Hypothyroidism is the most common endocrinal disorder with variety of presentations. It has a detrimental effect on erythropoiesis which leads to depleted body iron store and anaemia. As women are most common sufferers of hypothyroidism even with adequate iodine intake there should be mass screening for thyroid function along with haematological parameters for early detection and intervention. Also, microcytic anaemia is the most common type of anaemia in hypothyroid patients. So, it is suggested that prompt and early recognition and treatment of hypothyroid is needed to prevent the risk of developing anaemia.

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