



PREVALENCE OF ANAEMIA IN DIABETES MELLITUS TYPE-II

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ABSTRACT

The aim of the study was to assess and describe the prevalence of anaemia in Patients of Diabetes Mellitus-Type II, who attended OPD of Central Research Institute of Unani Medicine, Basaha, Lucknow, India. Study period was of one year i.e. from April 2017 to March 2018. All the patients attending OPD for DM problem were included in the study. 37 cases of DM between the age group of 18 to 65 yrs of any sex were studied. Anaemia is defined as low Haemoglobin concentration in the blood. Haemoglobin estimation was done by cyanmethemoglobin method. Hb criteria were taken according to WHO standard. Statistical analyses were done using percentage and Chi-square test. The prevalence of anaemia in our study group was about 41%. After the study we found that majority (60%) of patients of DM having Anaemia belonged to age group of <50 years and maximum patients were Females. Prophylaxis of Anaemia should be done by educating patients about nutrition and dietary supplementation.

KEYWORDS: Anaemia, Diabetes Mellitus-Type II, Haemoglobin, Prevalence, WHO, OPD.

INTRODUCTION

Anaemia is defined as deficiency of Haemoglobin in the blood which can be caused by either too few RBC or too little Haemoglobin in the cells. (Number of RBC < 4 million /micron or Haemoglobin < 12 gm/dl or both). The WHO defines Anaemia as a haemoglobin level <13 gm/dl in males and < 12 gm/dl in females.^[1] The normal female haemoglobin reference range changes from 12 – 16 gm /dl and male 13 – 17 gm/dl. Anaemia can be defined as condition in which the oxygen-carrying capacity of the blood is decreased and is insufficient to meet the body's physiological needs. Anaemia is a major public health problem worldwide problem with the highest prevalence in developing countries.^[2-3]

It is more in females than males. Common causes of anaemia are Inflammation, chronic disease, iron deficiency, infectious diseases, deficiencies of micronutrients such as folate, vitamin B12, inherited conditions such as thalassemia, environmental pollutants such as lead, Maturation defects, haemolysis, haemorrhage, tumours, bone marrow defects, malaria, hookworm infestation, diarrhoea, heavy menstrual blood flow etc.^[4-5]

Dietary factors play an important role in anaemia and are more critical in low to middle income countries. Lack of balanced diet may expose an individual to anaemia.^[6] It is multi factorial with widespread negative consequences on health. Low socioeconomic status is an important risk factor for developing anaemia.^[7] It has a negative influence on the social and economic development of country.

Diabetes Mellitus-Type II is a metabolic disease characterized by hyperglycemia resulting from defects in insulin secretion, insulin action or both.^[8] Patients having Fasting plasma glucose levels between 126 and 150 mg/dl and 2 hrs post prandial levels between 200 and 250 mg/dl were studied. This disease may also be

hereditary. Symptoms of marked hyperglycemia include polyuria, polydipsia, weight loss, sometimes with polyphagia, and blurred vision. Acute life threatening consequences of uncontrolled diabetes are hyperglycemia with ketoacidosis or the nonketotic hyperosmolar syndrome. Long term complications of DM include retinopathy with potential loss of vision, nephropathy leading to renal failure, peripheral neuropathy with risk of foot ulcers, and Charcot joints. Autonomic neuropathy causing gastrointestinal, genitourinary, cardiovascular symptoms and sexual dysfunction. Peripheral arterial, cerebrovascular disease, hypertension and abnormalities of lipoprotein metabolism are often found in people with DM.

METHODS

The present study was carried out in Central Research Institute of Unani Medicine, Lucknow. A total of 37 patients of any sex aged between 18 to 65 years attending OPD for Diabetes were taken as cases and were included in the study. Study period was about one year i.e., from April 2017 to March 2018. For estimation of blood haemoglobin, 1 ml of venous blood was collected with all aseptic measures in vacutainer containing EDTA. After collection, blood was gently mixed with the anticoagulant. Haemoglobin estimation was done by Cyanmethemoglobin method. Hb criteria were taken according to WHO standard in which Anaemia in females was defined as haemoglobin less than 12 g/dl. Whereas less than 13g/dl in males.

RESULTS

A Total of 37 patients were included in the study. **Table: 1** showing the overall prevalence of Anaemia. 41% were Anaemic while 59% were non-anaemic. **Table: 2** showing Age wise distribution. A higher prevalence of anaemia about 60% was observed in age group of less than 50 years. It was seen that more than 50 years of age group were comparably less anaemic than less than 50 yrs. of age group. **Table:3** showing sex wise distribution. Female diabetic patients were found more anaemic compare to males.

Table: 1: Prevalence of Anaemia in Diabetic Mellitus-Type-II

	No of Diabetic Patients	Percentage (%)
Anaemia Present	15	41%
Anaemia Absent	22	59%
Total	37	100%

41% of Diabetic patients were anaemic.

Figure 1

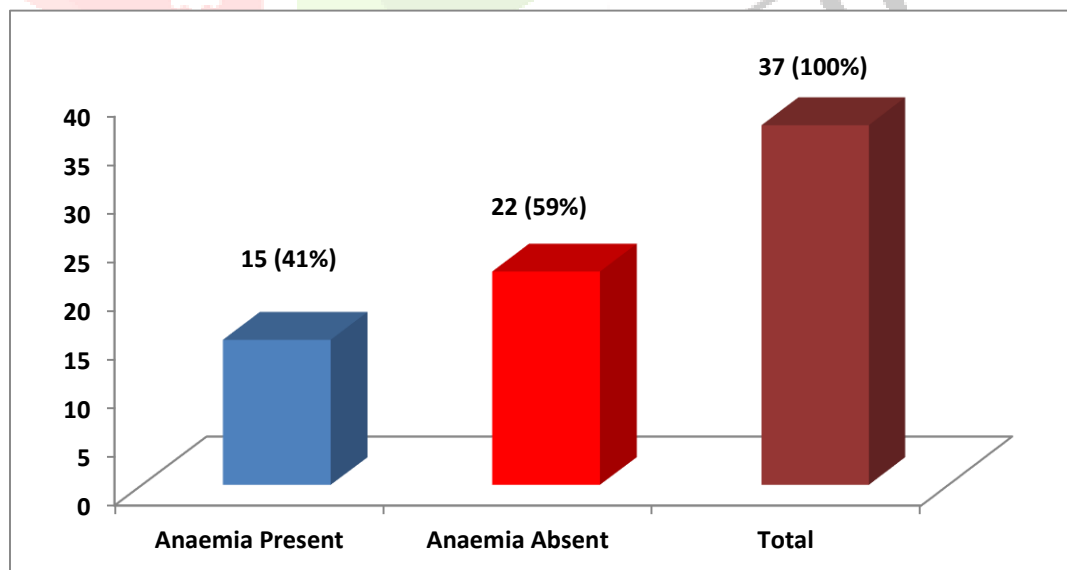


Table: 2: Age wise distribution of Anaemia in DM-Type-II

Age group(yrs.)	No of Patients	Percentage (%) of patients
< 50 yrs.	09	60%
> 50 yrs.	06	40%

Majority (60%) of patients were less than 50 yrs of age group.

Figure 2

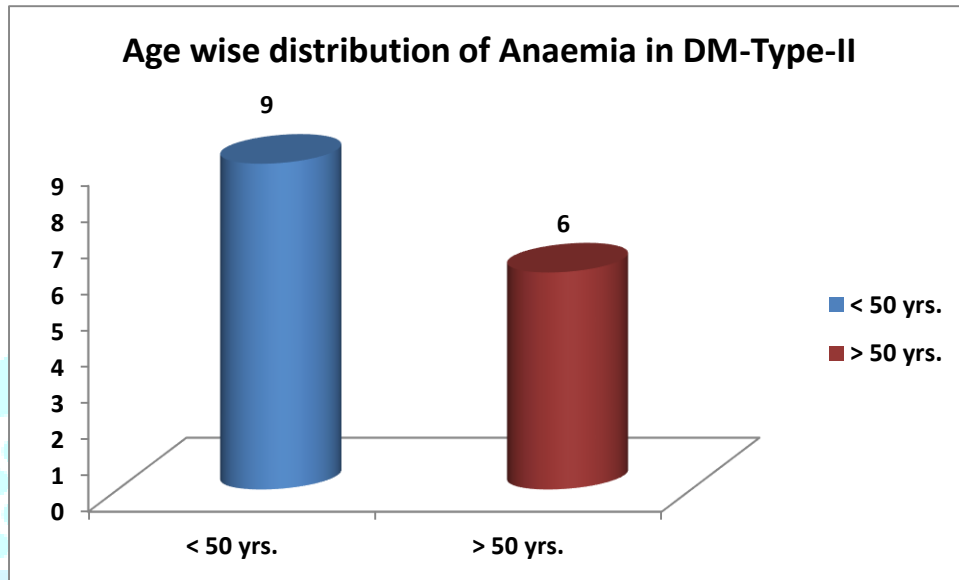
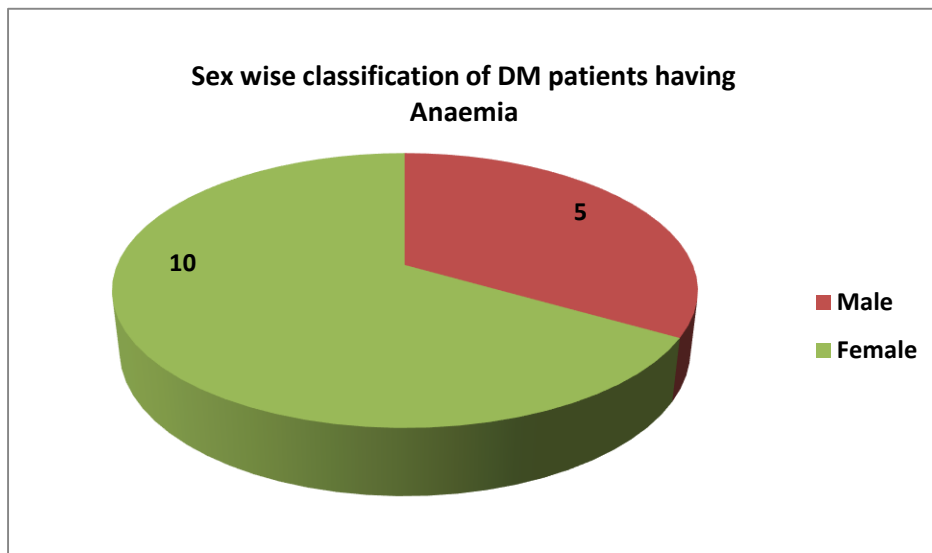


Table: 3: Sex wise classification of DM patients having Anaemia

Sex	No of Patients	Percentage (%) of patients
Male	5	34%
Female	10	66%

Maximum (66%) patients were females.

Figure 3



DISCUSSION

Anaemia is a major public health problem in India. Government of India has made many policies to combat this problem. WHO and UNICEF also started different programs to reduce anaemia. It reduces the work capacity of individuals and entire populations, bringing serious economic consequences and obstacles to national development'. Prevalence may be due to socioeconomic status, geographical condition, lifestyle, food habits etc. While there are regional differences, prevalence rates across the states are remarkably similar, reflecting underlying determinants that include diets low in heme-iron and high in phytates, high levels of malaria and other infectious diseases, and frequent reproductive cycling that decreases iron stores.^[9, 10] In present study 15 out of 37 subjects were found to be anaemic. (41%). It may reflect social and biological vulnerability both within society and the household. ^[11]

CONCLUSION

The present study showed that anaemia is a major health problem among the Diabetic patients. About 41% of Diabetic patients were anaemic. Prevalence of anaemia was more in patients of less than 50 years of age group. Female patients were more anaemic about 66%. This age group should be screened regularly and appropriate measures should be taken for correction of anaemia, and ultimately reducing morbidity and mortality.

RECOMMENDATIONS

To initiate strengthening of anaemia prophylaxis programs including nutritional education and health education. Development of an information, education, and communication (IEC) strategy for improving the health status.

To educate females about healthy diet, and how to overcome anaemia - Iron-rich foods include beef and other meats, beans, lentils, iron-fortified cereals, dark green leafy vegetables, and dried fruit.

Folate- It is found in citrus fruits and juices, bananas, dark green leafy vegetables, legumes and fortified breads, cereals, and pasta.

Vitamin B-12- Rich in meat and dairy products. It's also added to some cereals and soy products, such as soy milk.

Vitamin C- Foods containing vitamin C — such as citrus fruits, melons and berries help increase iron absorption.

Encourage consumption of fortified foods if available.

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