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THE ROLE OF HEMOGLOBIN AND PACKED CELL VOLUME LEVELS IN DIABETIC PATIENTS TYPE 2 AT AL-NAJAF AL-ASHRAF PROVINCE

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ABSTRACT : Diabetes mellitus (DM), commonly known as diabetes is a group of metabolic disorders characterized by a high blood sugar level over a prolonged period. A descriptive study, Convenience sampling hundred cases with diabetes mellitus type two. This study was performed in medical city of AL-Sadder and hospital of AL-Hakeem in province of AL-Najaf AL-Ashraf.The data collection was carried out for a period from the 1st of February 2021 to the 28th of February 2021. There are several limitations to the present study in AL-Saader Hospital and some of their tests have been conducting in external laboratory. one way, at the level of probability of the significant differences (P<0.05) applying the statistical program SAS version 2010 by using one and one ways, T test. The results showed high rates of Diabetes mellitus II in male and female without significant differences (P<0.05) between both of them, in other hand found also no significant differences (P<0.05) regarding with the rates of Packed cell volume in all of patients (male and female). Whereas noticed obvious rates of Hemoglobin in female and female with significant difference (P<0.05). The results of this study in showed ages about (20 yrs) to more than 50yrs, high numbers of patients suffer from DM II in ages about(20-30)yrs. In comparison with other patients in different ages and no significant differences(P<0.05) found in ((31-40 yrs), (41-51 yrs), (140.73 ± 59.937), 142.94 ± 50.902)), respectively. Also, found no significant in numbers of patients that have Hb in all of ages. Whilst noticed the diabetic patients' in ages about(31-40) found significant in ranges of P.C.V. (P < 0.05) (42.19 ± 8.691) compared with other patients at different ages. These results showed obvious significant rates of numbers(P<0.05) in Diabetic patients' type II that have Hb and P.C.V, but the patients that suffer from DM II with P.C.V in which appeared significant differences and relationship(P<0.05) more thanHb, so, from this study were demonstrated found anemia in diabetic patients'.

Key words : Diabetes mellitus type II, risk factors, packed cell volume, hemoglobin.

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INTRODUCTION

Diabetes mellitus (DM) is a group of metabolic disturbances characterized by a high blood sugar quantity over a prolonged period of time (Word Health Organization, 2014). Symptoms often include frequent urination, increased thirst and increased appetite (Kitabchi *et al*, 2009). If left untreated, diabetes can cause many complications (Weiss and Goodnough, 2005). Acute problems can conclude diabetic ketoacidosis, death, or hyperosmolar hyperglycemic state, also serious long-term complications include cardiovascular disease, stroke, chronic kidney disease, damage to the nerves, damage to the eyes and cognitive destruction (Kitabchi *et al*, 2009).

DM is due to either the pancreas not leading to enough insulin, or the cells of the body not responding correctly to the insulin produced (Shoback *et al*, 2011). the three main types of DM.

Type I diabetes an autoimmune disease that take place when T cells assault and obliterate mainly of the pancreas's beta cell that are required to produce insulin, therefore it makes too little insulin or no insulin. Without the capability for making sufficient aquintity of insulin, the body isn't capable to metabolize blood glucose to emplye it efficiently for energy, and toxic acids (called

Table 2 : The rates of P.C.V, Hb and DM II according to age in patients.

Age (years)	No.	P.C.V	Hb	DM II
20 – 30	39	37.07 ± 9.793	12.88 ± 2.464	166.77 ± 85.811
31 – 40	22	42.19 ± 8.691	13.96 ± 2.784	140.73 ± 59.937
41 – 50	18	38.77 ± 9.332	12.67 ± 2.836	142.94 ± 50.902
> 51	21	37.47 ± 9.228	12.80 ± 2.299	150.21 ± 50.979
P-value		0.492	0.614	0.579

*Significant differences($P < 0.05$), n=100
*Mean ± SD
*P.C.V = Packed Cell Volume
*Hb = Hemoglobin
*DM II = Diabetes Mellitus II (Type 2)

Table 3 : The rate of P.C.V – Hb according to DM II in patients.

	Risk Factors	P-value
D.M II	**Hb**	0.021
	PCV	0.006

*significant differences ($P < 0.05$), n=100
*P.C.V = Packed Cell Volume
*Hb = Hemoglobin
*DM II = Diabetes Mellitus II (Type 2)

determined the frequency of anemia among patients with T2DM and the factors associated with anemia. Anemia was common among patients with T2DM, also proved that the diabetic patients' have renal failure that lead to decrease in absorption in Iron and lack of Hemoglobin and finally leading to occurrence of anemia. Also the results of this study regarding to rates of PCV in Diabetic patients' is agreement and similar with previous study of Sakpa and Idemudia (2014), where they are found lowest in rates of packed cell volume among patients of DMII in comparison with another risk factors such as anemia, renal disease, ages, iron deficiency.

CONCLUSION

1. High rates of packed cell volume were found in inpatients of Diabetes mellitus type II more than Hemoglobin.
2. In case of ages there are differences in numbers of inpatients with DM type II, HB and PVC.

The DM type II, HB and PVC have differences in significance ($P<0.05$) between male and female inpatients'.

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Authors contributions

Ahmed Aqeel Sharrad, Osamah Saad Ali, Haneen Salih Abbas, Mohanad Abbas Ali Safaa Abbas Hadi): ollected the data.

Saad SaleemRaheem: Analysis of data statistically.

Yaqhthan Al-Nomani: Write the refernces that correlate with this research.

Hanan Fadhil Aswad: Write the papers of the reserach

Conflict of interest

There is no conflict of interest.

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