Available online on www.ijpqa.com
International Journal of Pharmaceutical Quality Assurance 2018; 9(2); 109-116
doi: 10.25258/ijpqa.v9i2.13631
ISSN 0975 9506

Research Article

Prevalence of Diabetes Mellitus and It's Complications in Iraq

Qayssar Joudah Fadheel

University of Kufa, Faculty of Pharmacy, Department of Pharmacology and Toxicology, Iraq

Received: 27th Mar, 18; Revised: 21st Apr, 18, Accepted: 12th May, 18; Available Online: 25th Jun, 2018

ABSTRACT

Diabetes mellitus is a chronic metabolic disease characterized by long term elevation of blood glucose levels. A number of reasons that increase blood glucose level include (not enough insulin or oral diabetes drugs,too much food, adverse effects from other drugs, such as steroids, or conditions such as stress ,long- or short-term pain ,menstrual periods, dehydration). Objective: To assess the prevalence of type11 diabetic mellitus and its complications and comparison between different complications among people in Iraq. Patient: This is a randomize prospected, clinical study it was carried out in Iraqi Hospitals, Department of Medicine, emergency. This study was started at December 2016, this approved medical ethical community at University of Kufa. Methods: Sample of 100 cases (50 male and 50 female) in Iraq was selected in random manner and all the patients found in the Iraqi Hospitals at the time of visiting. Where directly meet the patients and collect data from each patient according to specific questionnaires: weight, height and blood glucose level were obtained. Materials: Blood glucose level was measure by using specific device and must keep it in suitable place with maintenance of sterility and recalibration. Further advices were taken from Departments of clinical/biomedical engineering and Local medical physics. Results: The prevalence diabetes mellitus complications among the study populationwas as follow:-(Diabetic neuropathy 98%), (Diabetes retinopathy 96%), (stroke 60%), (Diabetic nephropathy 36%), (Hypertension 63%), (foot problems 60%). A significant difference was founded between some diabetic complications, these were (Neuropathy & hypertension), (Retinopathy & hypertension), (Retinopathy & stroke), (Nephropathy & hypertension), (Nephropathy & Stroke), (Hypertension & Foot problems), (Foot problem & stroke), (Neuropathy & stroke). Conclusion: The prevalence of diabetes mellitus complications was lying within that reported in Iraq. There was a significant difference recorded between some diabetic mellitus complications. Early diagnosis of diabetes mellitus and make program to the patient about lifestyle behavior were highly considered.

Keywords: Diabetes Mellitus

INTRODUCTION

Diabetes mellitus is a chronic metabolic disorder which take place when the ability of the body to produce sufficient insulin is impaired or the cannot utilize the available insulin, and is diagnosed by high blood glucose level. Beta-cell of pancreas secret insulin; it is essential to transfer glucose from the blood into the body's cells where it is used as energy. If insulin is not present or present but ineffective in patient with type 11 diabetic mellitus this mean that glucose remain in blood and with time result in high blood glucose level result in hyperglycemia which lead to destruction of many tissues, that result in life-threatening complications of heaths and disabling[1]. In clinical aspect diabetic mellitus disease is characterized by the sustained elevation of blood glucose level. Diabetic mellitus classified into Type 1 diabetic mellitus can impact children or adults, but was traditionally called "juvenile diabetes" due to most of these cases were observed in children[2], in which there is a loss of insulin secreted by beta-cell of pancreas that lead to deficiency of it. In type 2 diabetic mellitus there were insulin resistant in addition to relatively reduce insulin secretion[3]. Gestational diabetic similar to type 2 diabetic mellitus in many situations, involving a combination of insulin resistant and secretion[4]. Management of Type 2 diabetic includes non-pharmacological treatment involving lifestyle changes such as physical activity, nutrition, stop smoking, diabetic education[5,6]. Individuals with type1 diabetic mellitus must use insulin. Some individuals suffer from type2 diabetic mellitus can treat his/her condition with suitable healthy eating and exercise. Physician may need also to prescribe oral hypoglycemic drugs and/or insulin to help patient to reach target blood glucose level[7]. Most medications available for treatment of type 2 diabetic are oral. However, a few present as injections. Some patients with type 2 diabetes mellitus may also need to administer insulin[8].

Patients

This is a randomize prospected, clinical study it was carried out in Iraqi Hospitals, Department of Medicine, emergency. This study was started at December 2016, this approved medical ethical community at University of Kufa.

METHODS

Sample of 100 cases (50 male and 50 female) in Iraq was selected in random manner and all the patients found in

**Author for Correspondence: qayssarj.fadheel@uokufa.edu.iq*

the Iraqi Hospitals at the time of visiting. Where directly meet the patients and collect data from each patient according to specific questionnaires: weight, height and blood glucose level were obtained.

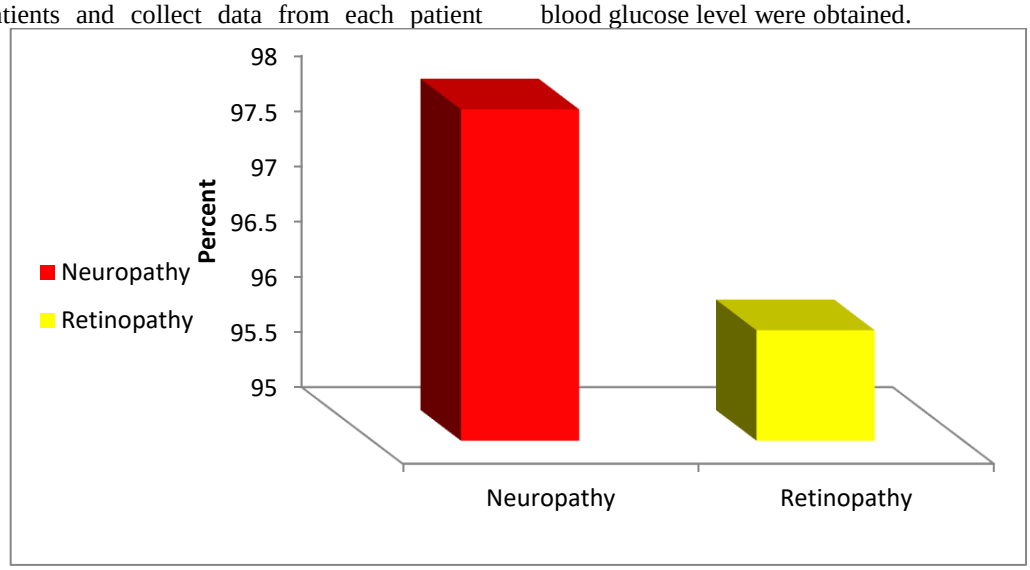

Figure 1: Comparison between Neuropathy and Retinopathy.

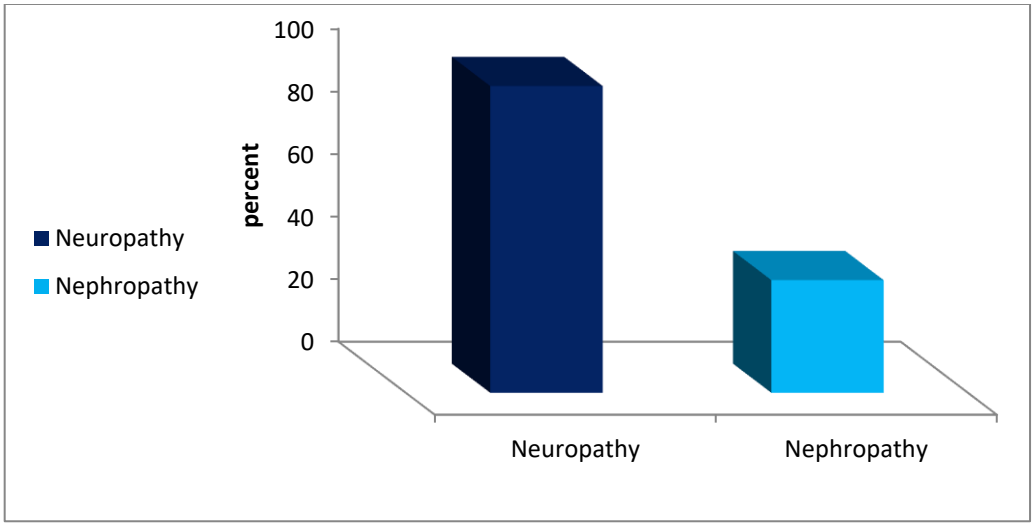

Figure 2: Comparison between Neuropathy and Nephropathy.

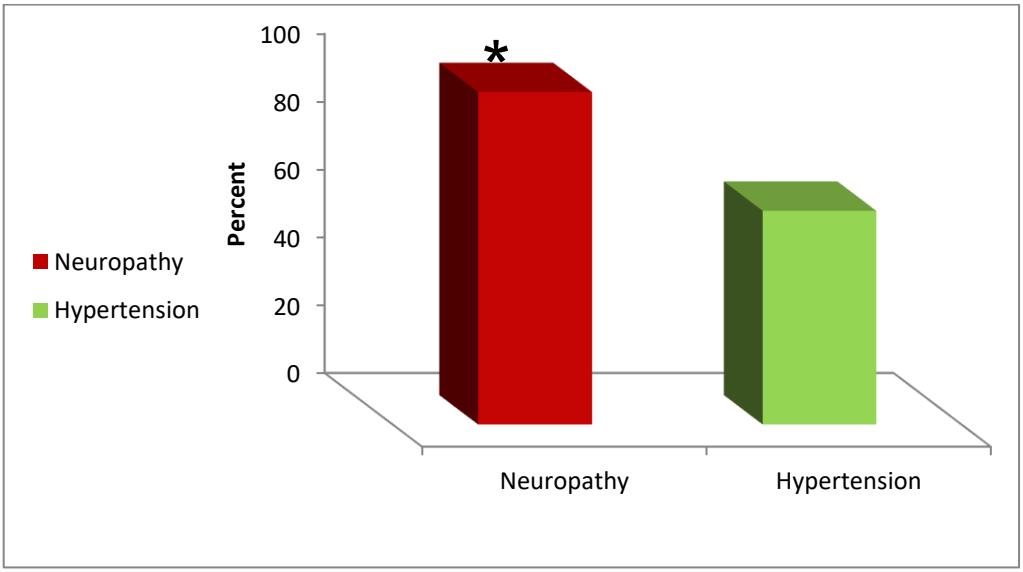

Figure 3: Comparison between Neuropathy and HypertensionMean significant difference

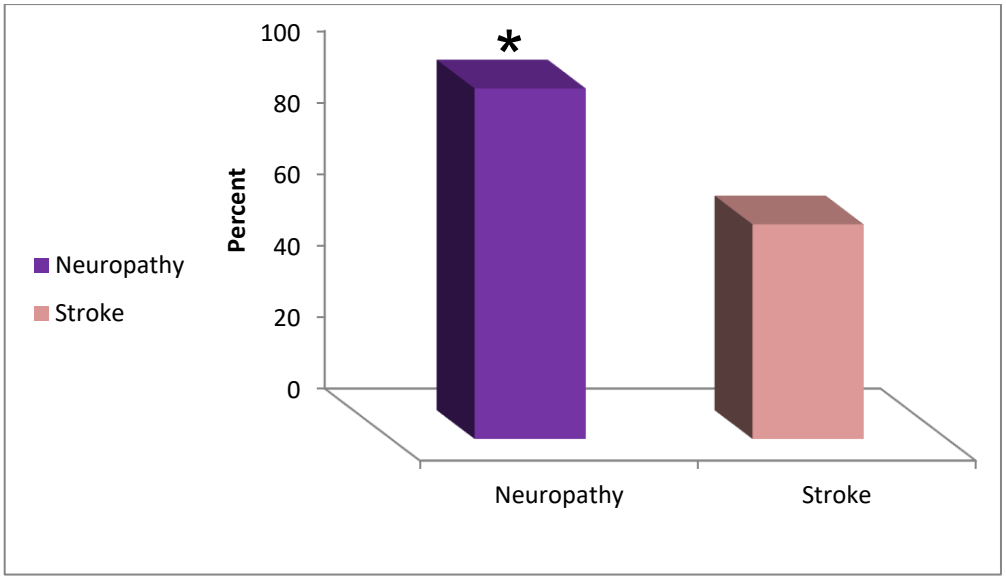

Figure 4: Comparison between Neuropathy and Stroke.

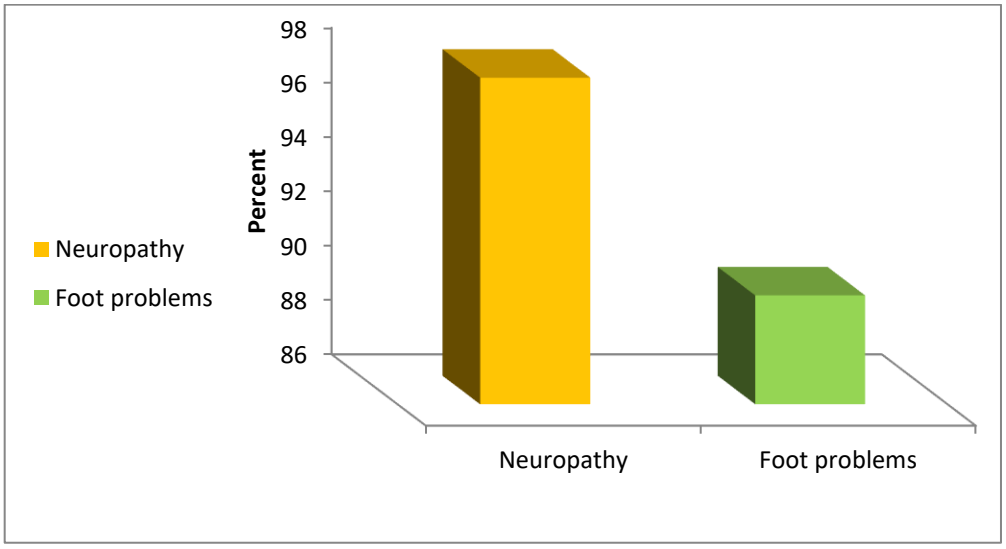

Figure 5: Comparison between Neuropathy and Foot problems.

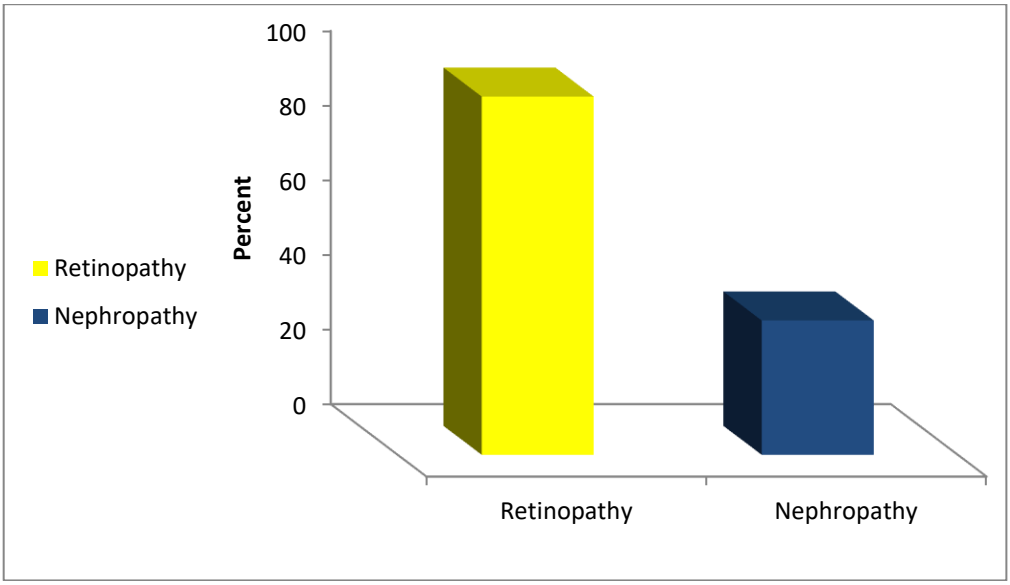

Figure 6: Comparison between Retinopathy and Nephropathy.

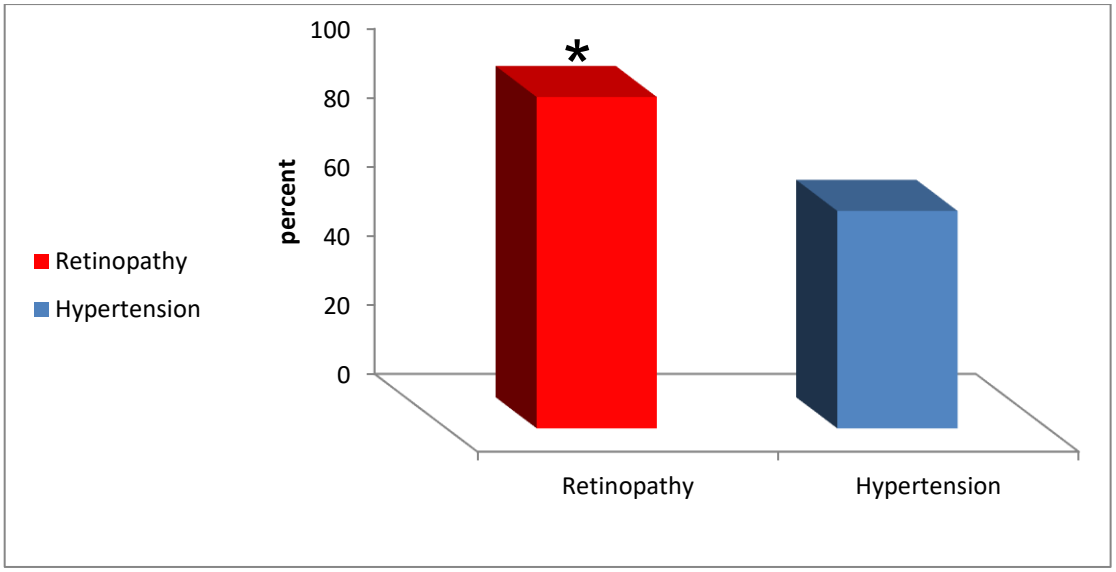

Figure 7: Comparison between Retinopathy and Hypertension.

Mean significant difference

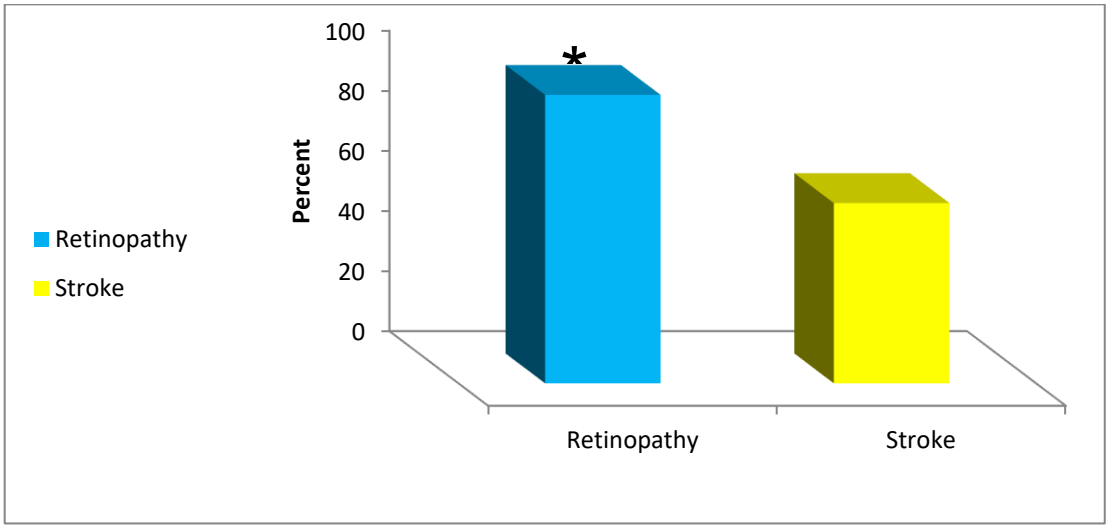

Figure 8: Comparison between Retinopathy and stroke.

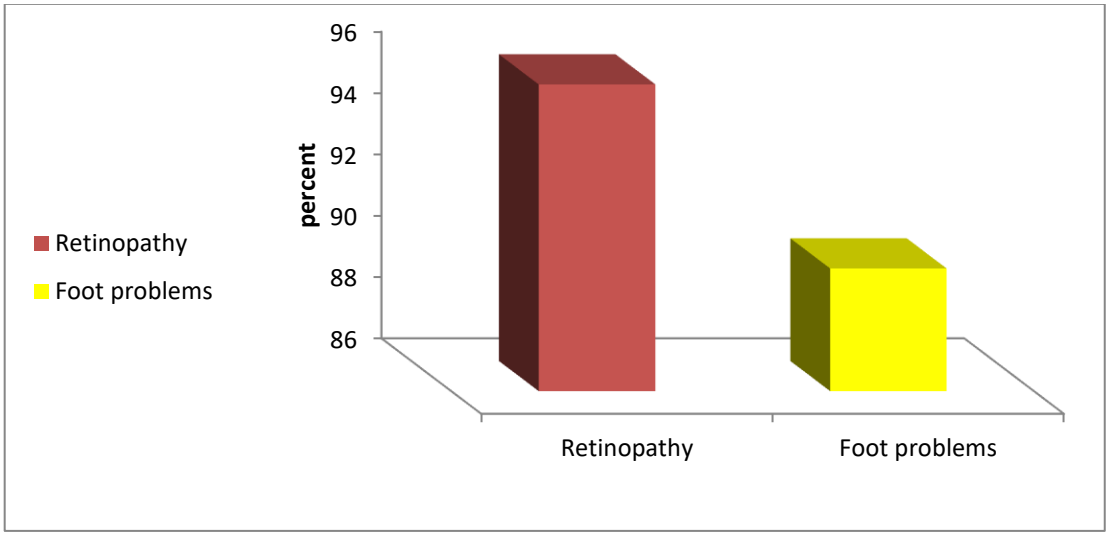

Figure 9: Comparison between Retinopathy and Foot problems.

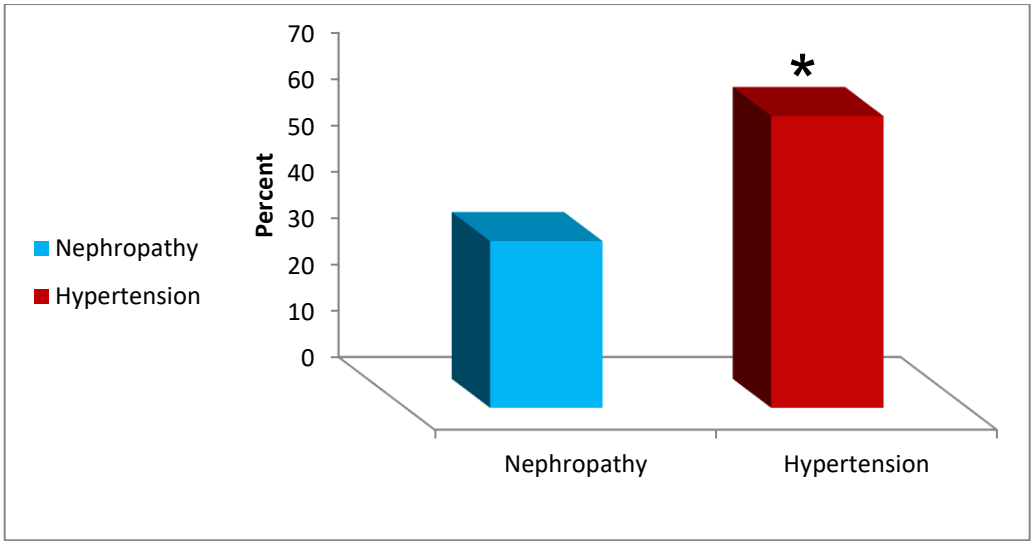

Figure 10: Comparison between Nephropathy and Hypertension.

Mean significant difference

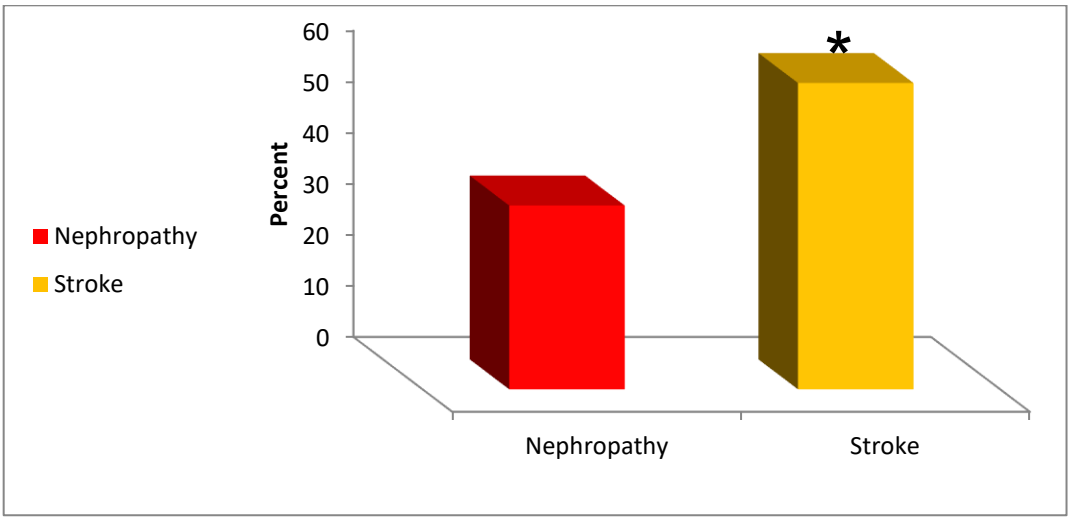

Figure 11: Comparison between Nephropathy and Stroke.

Mean significant difference

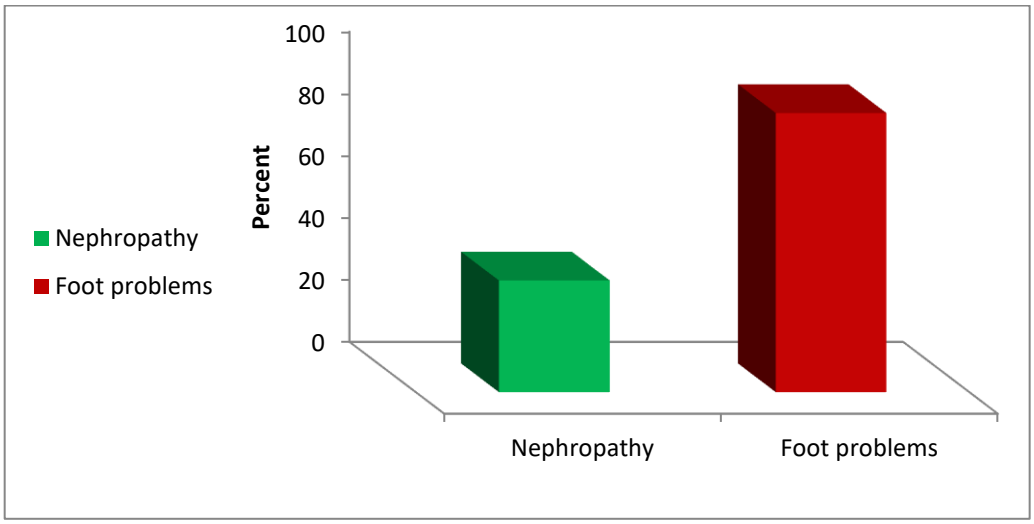

Figure 12: Comparison between Nephropathy and Foot problems.

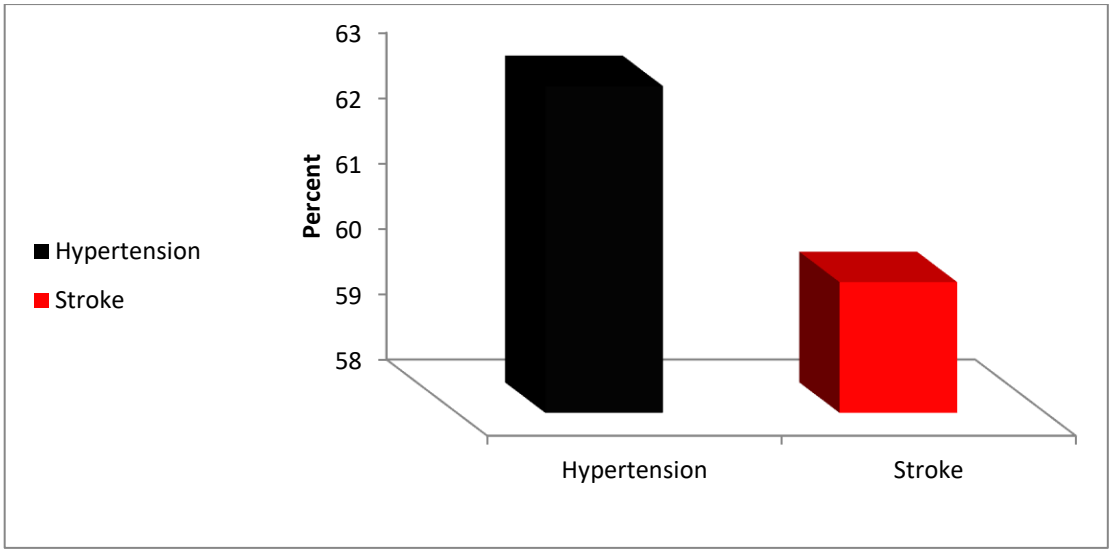

Figure 13: Comparison between Hypertension and Stroke.

Mean significant difference

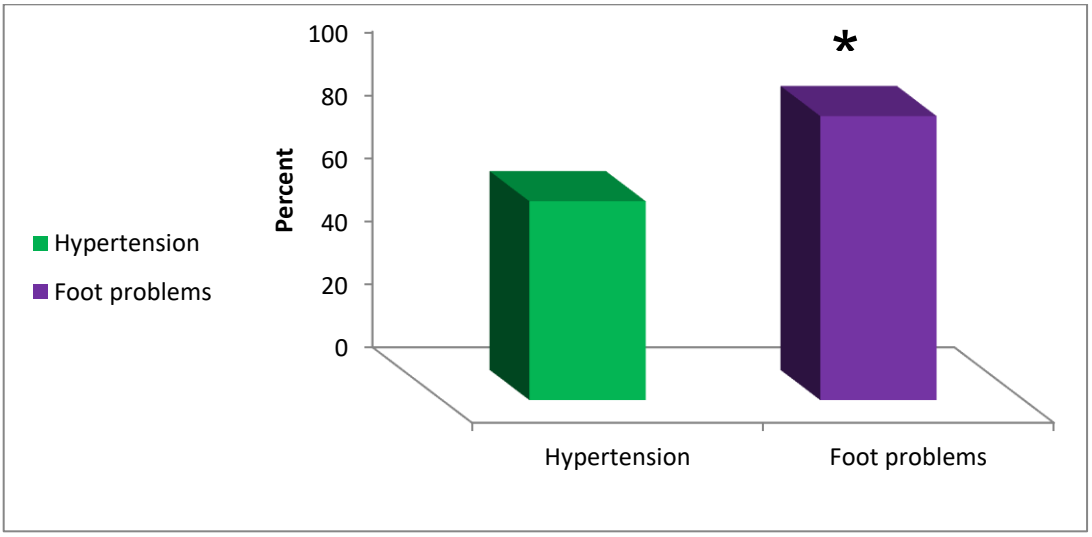

Figure 14: Comparison between Hypertension and Foot problems.

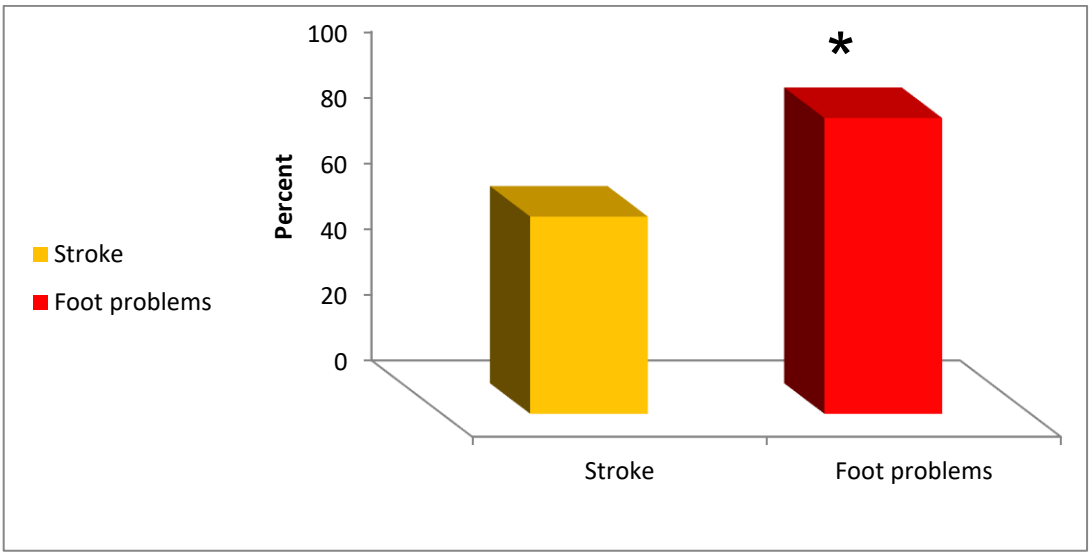

Figure 15: Comparison between stroke and Foot problems.

MATERIALS

Monitoring blood glucose is as necessary as ever. Technology has given real freedom to individuals with diabetes. The objective of diabetes management these days is simply to permit for a normal life. The glucose concentration in person blood was determine by using the devices (Spectrophotometer and Reflow torn plus).

Statistical Analysis

Statistical analysis were done using SPSS 16.0 program. Statistical advice was consulted for tests utilized. Data of quantitative variable were expressed as mean ± standard error mean. Differences in each variable through treatment intervals within the same group were compared using paired sample students test.In all tests, $P < 0.05$ was consider to be statistically significant unless another levels were stated.

RESULTS AND DISCUSSION

Neuropathy & hypertension

The results of present study showed a significant difference between Neuropathy and hypertension (p value less than 5%), this findings is in agreement with[9,10,11] which state that diabetic neuropathy is the only microvascular complication of diabetic mellitus that affects the whole body. Hypertension has been introduced as an independent risk factor for diabetic neuropathy. In insulin-dependent diabetic mellitus patients suffering from neuropathy, red blood cell, Na/K ATPase is reduce. Such a decline might be participated in the physiopathology of hypertension and for this reason there is a link between hypertension and neuropathy. Rise in pressure on the median nerve causes carpal tunnel syndrome

Retinopathy & hypertension

The results of current study showed a significant difference between Retinopathy and hypertension (p value less than 5%), this results is in agreement with (12) which state that diabetic retinopathy is a more serious complication of diabetic mellitus for this reason individuals with diabetic must be regularly visit ophthalmologist to check their eyes. Blood glucose level must be controlled in order to delay or prevent diabetic retinopathy especially in middle age individuals. Enhanced incidence of this complication suggests that further care are needed to prevent the development of this complication and blindness. Control of blood pressure may be another method to prevent or delay diabetic retinopathy. Retinal hyperperfusion is a main source of injury in diabetic retinopathy linked with shearing damage to capillaries. Elevated retinal blood flow is present with conditions that worsen diabetic retinopathy; these include pregnancy, hyperglycemia, hypertension, and autonomic neuropathy.

Retinopathy and stroke

The findings of present study showed a significant difference between stroke and retinopathy (p value less than 5%), this findings is in agreement with[13] which state thatindividual with diabetic mellitus have a greater risk of stroke and stroke mortality than those without diabetic mellitus, and a large cohort study has now shown diabetic retinopathy may be a risk indicator for cerebral microvascular disease. Inside thecenter of eye research subgroup analysis, the individuals with retinopathy tended to havehigher fasting glucose, hypertension and used insulin more than those without retinopathy. During the follow-up of individuals, there were81 total strokes and 75 ischemic stroke events. In addition, those suffered from retinopathy were more likely to possess ischemic stroke than those without retinopathy. Dr. Wong told "after adjustment for other risk factors, diabetic retinopathy was significantly linked with incident of ischemic stroke.

Nephropathy and hypertension

The results of present study showed a significant difference between hypertension and nephropathy (p value less than 5%), this findings is in agreement with[14,15] which state that hypertension is negative factor in all advance diseases of the kidney and more specifically in diabetic nephropathy. The deleterious influences of hypertension are directed at vasculature and microvasculature. metabolic abnormalities (eg, hyperglycemia, dyslipidemia,) and Hypertension, with enhances in intraglomerular capillary pressure likely interact to enhance renal injury. Renal vasodilation, enhances in the intraglomerular capillary pressure and glomerular filtration rate, and elevated blood pressure also are characteristics of diabetic nephropathy.

Nephropathy and Stroke

The findings of current study show a significant difference between Nephropathy and Stroke (p value less than 5%), this returns is in agreement with[16,17] which state that persons with diabetic nephropathy complication usually symptoms not appear early, despite of the condition puts them at greater risk of developing more dangerous kidney disease. If the disease attack kidney, they falter in their task, leaving the blood polluted complications of diabetic nephropathy may develop step by step over months or years. They may includeblood vessel disease andheart (cardiovascular disease), possibly leading to stroke.

Hypertension and Foot problems

The findings of present study show a significant difference between Hypertension and Foot problems (p value less than 5%), this findings is in agreement with[18,19] which state that venous hypertension is eventually lead to venous ulceration. This due to many reasons; the major one is venous valvular incompetence or insufficiency which may be acquired or congenital. Failure of the venous pump or muscle, venous obstruction may also lead to venous hypertension.

Foot problem and stroke

The results of present study showed a significant difference between Foot problem and stroke (p value less than 5%), this finding is in agreement with[20] which state that diabetic mellitus can damage an individual's blood vessels and nerves, especially if the individual's blood sugar is poorly controlled. nerve damage and poor circulation in the feet make individual vulnerable to not

saw cuts or other injuries and develop into poorly healing ulcers. In very severe cases, this can lead to leg or foot amputation.

Neuropathy and stroke

The findings of present study display a significant difference between Neuropathy and stroke (p value less than 5%), this findings is in agreement with[21] which state that Neuropathy is a type of nerve destruction. Nerves are lied in thelegs and arms and throughout the body. A nerve supplies an electrical stimulus to muscles that stimulate the muscles to move. Nerves also receive input from different sites of body, sending messages to the brain about the body's sensations, such as hot and cold.

CONCLUSION

The prevalence of diabetes mellitus complications was lying within that reported in Iraq.. A significant difference was founded between some diabetic complications, these were (Neuropathy & hypertension), (Retinopathy & hypertension), (Retinopathy & stroke), (Nephropathy & hypertension), (Nephropathy & Stroke), (Hypertension & Foot problems), (Foot problem & stroke), (Neuropathy & stroke). Early diagnosis of diabetes mellitus and make program to the patient about lifestyle behavior were highly considered.

REFERENCES

1. Idf Diabetes Atlas Seventh Edition 2015
2. Rother KI. "Diabetes treatment—bridging the divide". The New England Journal of Medicine. 356 (15): 1499–501. doi:10.1056/NEJMp078030. PMC 4152979Freely accessible. PMID 17429082. (April 2007)
3. Shoback, edited by David G. Gardner, Dolores. "Chapter 17". Greenspan's basic & clinical endocrinology (9th ed.). New York: McGraw-Hill Medical. ISBN 0-07-162243-8. (2011)
4. "National Diabetes Clearinghouse (NDIC): National Diabetes Statistics 2011". U.S. Department of Health and Human Services. Retrieved 22 April 2014.
5. Wheeler ML. Nutrition management and physical activity as treatments for diabetes. Prim Care;26:857-68. (1999)
6. Meltzer S, Leiter L, Daneman D, et al. clinical practice guidelines for the management of diabetes in Canada. CMAJ;159(8 Suppl):S1-29. 1998
7. Diabetes Mellitus, Alvin C. Powers in Harrison's Principles of Internal Medicine, 18th edition.(2015)
8. Diabetes treatment: Medications for type 2 diabetes. (2014, September 20).
9. Coulson, W. F. Statin neuropathy? The Journal of Family Practice, 60(4), 182–184. (2011, April).
10. Peripheral neuropathy fact sheet. (2016, March 9).
11. Diabetic neuropathy. (2010, April 16).
12. Do DV, et al. Blood pressure control for diabetic retinopathy Cochrane Database Syst Rev.(2015)
13. Chueng N, Rogers S, Couper DJ, Klein R, Sharrett AR, and Wong TY. Is diabetic retinopathy an independent risk factor for ischemic stroke? Stroke. (2007)
14. Ekinci EI, Jerums G, Skene A, Crammer P, Power D, Cheong KY. Renal structure in normoalbuminuric and albuminuric patients with type 2 diabetes and impaired renal function. Diabetes Care. 2013 Nov. 36(11):3620-6.
15. Hall JE, Henegar JR, Dwyer TM, Liu J, Da Silva AA, Kuo JJ. Is obesity a major cause of chronic kidney disease?. AdvRen Replace Ther. 2004 Jan. 11(1):41-54.
16. Gross JL, de Azevedo MJ, Silveiro SP, et al. Diabetic nephropathy: diagnosis, prevention, and treatment. Diabetes Care 2005; 28:164.
17. Clinical Practice Guidelines and Clinical Practice Recommendations for Diabetes and Chronic Kidney Disease. Am J Kidney Dis 2007; 49:S12.)
18. Browse NL, Burnand KG. The cause of venous ulceration. Lancet. 1982, 2: 243-245.
19. Coleridge-Smith PD, Thomas P, Scurr JH, et al: Causes of venous ulceration: A new hypothesis?. Br Med J. 1988, 296: 1726-1727.
20. Study announced on October 10 by St. George's, University of London, in the U.K 2016.
21. Weiner, William J., Goetz, Christopher G, Neurology for the Non-Neurologist, Fifth Edition, Lippincott Wiliams&Winkins, 2004.