Measuring blood glucose level for diabetics type II and its prevalence between the patients in wasit province from 40 age and older

Zahraa Alwan Jasim , College of Science, Wasit University , Wasit / Iraq.

قياس مستوى السكر لمرضى السكري نوع الثاني ومدى انتشاره بين المرضى في محافظة واسط
من عمر(40) سنة فما فوق

زهراء علوان جاسم /كلية العلوم – جامعة واسط / واسط ـ العراق

المستخلص

تم إجراء هذا البحث لقياس مستوى السكر لمرضى السكري النوع الثاني ومدى انتشاره بين الفئات العمرية من عمر 40 سنة فما فوق في كلا الجنسين .شملت الدراسة على 400 شخص مصابين بمرض السكري النوع الثاني مسجلين في مركز الصحي طيبة النموذجي في محافظة واسط , وتم تقسيم المرضى الى فئات عمرية , المجموعة الاولى (40-49 سنة) والمجموعة الثاني (50-59) والمجموعة الثالثة (60-69) والرابعة (70سنة + فما فوق), حيث جمعت العينات من المرضى بعد تناول الطعام بساعتين واجراء تحليل قياس مستوى السكر العشوائي ومقارنة متوسط قيمة السكر بين الفئات العمرية . ان الغاية من اجراء هذه الدراسة هو لمقارنة متوسط قيمة سكر الدم بين الفئات العمرية وفي اي فئة عمرية يوجد اكبر عدد من المرضى مصابين بداء السكري وفي اي من الجنسين سجلت اعلى نسبة مئوية لهذا المرض, وأيضا هذه الدراسة هي اول دراسة على برنامج الكشف المبكر عن مرضى السكري في مركز طيبة النموذجي في محافظة واسط , حيث اظهرت الدراسة ان اعلى قيمة لمتوسط سكر الدم العشوائي سجلت في المجموعة الاولى ذات الفئة العمرية (40- 49 سنة) حيث سجلت(179.8) وذلك بسبب ان المرضى ضمن هذه الفئة في بداية اكتشافهم للإصابة بهذا المرض وعدم تناول العلاج وعدم الالتزام بغذاء صحي . اما المجموعة الثانية والثالثة فكانت قيمة متوسط السكر اقل مما هو في المجموعة الاولى وذلك بسبب التزامهم بأخذ العلاج المناسب لمرض السكري والالتزام بالحمية الغذائية , اما اقل قيمة لمتوسط قيمة السكر العشوائي سجلت للمجموعة الرابعة ذات الفئة العمرية(70+) بسبب ان هذ الفئة العمرية أيضا الالتزام بالحمية وتناول العلاج وكذلك امتلاكهم لنسبة سكر معتدلة , كذلك ان اكثر عدد من المصابين بالسكر كانوا من ضمن الفئة العمرية من (40-49 سنة)(38%) تليها الفئة العمرية(60-69) سنة (27%) , وبعدها (50-59 سنة) (26%) اما الفئة العمرية (70+) كانت اقل نسبة (12%) . كما اظهرت الدراسة ان الاناث كانت لديهم نسبة اعلى اصابة من الذكور حيث بلغت (58٪) اما الذكور فكانت النسبة (42٪) من مجموع المرضى الكلي 400 مريض .

ABSTRACT

This study was conducted to measure the level of Random Blood Glucose(RBG) for type 2 diabetic patients and their prevalence among the age groups of 40 years and older in both sexes. The study included 400 people with type II diabetes registered at the Center of Teaba Healthy of wasit province . Patients were divided into age groups, the first group (40-49 years), the second group (50-59), the third group (60-69), the fourth (70+ years and older), the blood collected after two hours from eating , then we had made comparison between the mean value of RBG for groups . The aim of study was to know in any of which age group, RBG was higher , also knows the prevalence of the diabetic among patients by made a percentage to all groups, also our study is the first of its kind for early detection of diabetic patients in Center of Teaba Healthy of wasit province . Result in this study , showed the diabetics that have been higher mean value of RBG (179.8) were with the group of age (40-49) , and the high percentage for number of diabetic in total number 400 was in the same group of age (40-49) was recorded 38%, the women also was had a percentage   (58 %) compared with the males were had (42 %) from the total of all patients(400).

Key words: Diabetic mellitus type II, hyperglycemia .

INTRODUCTION

Diabetes is a serious, chronic disease that occurs either when the pancreas does not produce enough insulin (a hormone that regulates blood sugar, or glucose), or when the body being not effective to using the insulin it produces [1] . The human body have ability to product energy by digest carbohydrates to simpler particular sugar like glucose, monosaccharide is one of the most important sources of primary carbohydrate energy used by the body to doing vital activities . As reflex when the blood glucose being increase , beta cells from the pancreas will release hormones called insulin , the principal hormone that regulates uptake of glucose from the blood into most cells, where glucose is used either for via oxidative phosphorylation, or used to conversion for other molecules, or storage as glycogen and fat. Deficiency of insulin or persistent or recurrent hyperglycemia, leading to a chronic non-communicable disease called diabetes mellitus [2,3]. Repeated and prolonged episodes of hyperglycemia can damage blood vessels and nerves, leading to the well-known damage diabetes complications (retinopathy, neuropathy, nephropathy, amputation and cardiovascular dis ease). Type II diabetes is defined as chronic hyperglycemia producing from lowering insulin secretion, or from impaired insulin action or both in the absence of autoimmune destruction of the pancreatic beta cell [4]. Classically , type II diabetes occurs in the elderly , obese patients in the setting of strong family histories of diabetes and in relative with other components of the metabolic syndrome [5]. Globally, the total number of people with diabetes is projected to rise from 171 million in 2,000 to 366 million in

2,030 [6] , also in recently research found diabetic mellitus currently effect on 387 million people worldwide, and that is number have predicted to increase for 592 million by 2035 [7] . Diabetes in developed countries is a disease of the elderly while in Arab countries, its disease of younger age <60 years, which is the most productive age, making the problem of diabetes even worse [8]. The Prevalence self-reported diabetes mellitus, in Sulaimani (Northern Iraq) was 13% among 777 persons using self-reported fasting glucose >126 mg/dl in one study published in 2011[9,10].   The Highest prevalence of abnormal glycemic and diabetes was seen   in age range 40–59 years in both sexes in the study of [11]. Diabetes was slightly more prevalent in females than in males like many studies showed 62 % female and 45% male [2] .

Blood sampling :

Samples were collected during the period from 1/6/2017 until 1/9/2017 of patients with diabetes and registered with the health center. Blood samples were withdrawn from vein of patients after two hours of eating and their Random Blood Glucose (RBG)was calculated   using a chemical auto analyzer

Patients groups :

Diabetics were divided to four groups depended on their ages , the first group with age from 40-49 , second group with 50-59 , third group 60 – 69 , fourth group With 70   age and up, their blood glucose was measured. The mean   value of glucose was compared between the groups. Also we showed in this study   in which of the groups was recorded highest mean value of blood glucose . As well as the study
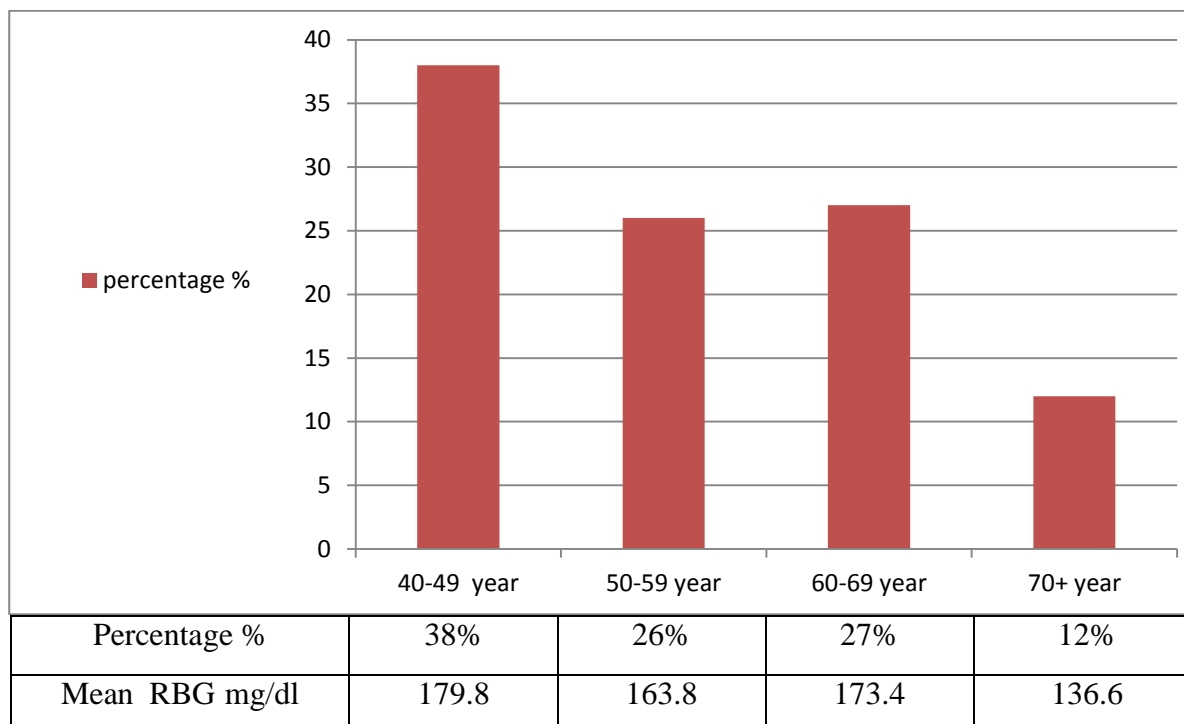
them ages and   knowledge of women or men had the highest rate of diabetes type II in the research.

RESULTS

The result appeared mean value of RBG was 179.8 for the diabetics with age (40-49) , and mean value   RBG was (163.8) for (50-59) age , mean value RBG(173.4) for (60-69) age and mean value of RBG was (136.6) for the last group with age of (70+). Also the percentage for high number with diabetes with age of (40-49)   it were 38% from total 400 patients , (27%) was to the third group for the age of (60-69), 26%   for the age of (50-59) , our results recorded lower ratio percentage for the fourth group (70+) All results had been summarized in figure(1).

Discussion

Diabetes is   a   serious,   costly,   and increasingly common chronic disease. Early detection, improved delivery of care, and better self-management are the key strategies for preventing much of the burden of diabetes . Our result showed a high mean value for the age (40-49) was(179.8) , most of patient this is
the first test to detect of diabetics and they continually with   normal eating meals contain carbohydrates   , so many of studies suggested that eating meal rich of saturated fats and poor in fiber are independent risk factors for DM type II [12-17] this is agreement with results of studies for [10, 11].

	40-49 year	50-59 year	60-69 year	70+ year
Percentage %	38%	26%	27%	12%
Mean RBG mg/dl	179.8	163.8	173.4	136.6

Figure (1) the percentage for the number patients with diabetes according for their ages :

But in the group with age (50-59) mean value was lower (163.8) because these patients used medicines for diabetic and they had A protective diet program . in the third group the mean value return to rise because diabetics do not obligated with medicines of diabetics and not follow a diet program (information collect from the patients) . In the fourth group (70+) age the mean value was the least mean value (136.6) because most of them having diabetic in elderly age and   have diet program in addition to almost half of all deaths attributable to high blood glucose occur before the age of 70 years [18]. Also the result appeared high percentage was with the age (40-49) (38%) , that was agreement with results of studies (IDF, and Abbas M) [8,11] that showed most of diabetics were with age (40-49) . As well as diabetic were more within the women (58%) than in males (42%) these result similar to the result in study for Mohammad B. & Ismail L.[2] that showed 62 %   for female and for 45% male .

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