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Efficacy of anti diabetic drugs that prescribed in public clinic and private pharmacies on glycemic control

Saad H. Saad

Al-Muthanna University, College of Medicine, Department of Medicine, F.I.C.M.S., MBChB

Abstract

Objective: To compare between efficacy of anti-diabetic medications (both oral and insulin) which prescribed in public clinic and medications prescribed in private pharmacies.

Design: Cross sectional study

Setting: Diabetic public clinic and Al-Hussain general teaching hospital

Subject: One hundred patient with different ages and types of diabetes (type1 or type 2 diabetes) randomly selected. Structured questioner sheets and medical records sheets were used to collect information.

Results: Analysis of the data demonstrate that N patients on medication prescribed by public clinic have high Hb1Ac and more complications as compared with N patients on medications prescribed by private pharmacies.

Conclusion: patients on medications prescribed by private pharmacies have better diabetic control and less complications than patients on public clinic prescribed medications.

Keywords: Diabetes , antidiabetic, insulin, effectiveness

Introduction

Diabetes stays a class of metabolic illnesses typified by hyperglycemia brought on by anomalies in the action or secretion of insulin, or both. Diabetes-related chronic hyperglycemia is linked to long-term harm, malfunction, and failure of numerous organs, particularly the heart, blood vessels, kidneys, eyes, and nerves. [1]

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Epidemiology

The incidence of diabetes has increased in recent decades. significantly increased now almost every part of world, and 415 million people worldwide today suffer from the condition. [7]

The occurrence of diabetes has significantly augmented during the older few decades in many nations in the International Diabetes Federation's Middle East and North Africa (MENA) Region (IDF). [3]

Diabetes rates are among the highest in the world right now in the MENA region. This tendency has been exacerbated by rapid financial development and urbanization, population aging, existence changes that take led to increased consumption of refined carbohydrates, decreased levels of physical action, and an upsurge in obesity. [4]

In the MENA Region, 10,700 In 2013, there were new bags of type 1 diabetes in children ages 0–14. Currently, 64,000 children in this age range have diabetes, representing a 0.03% prevalence.[5]

Approximately 90 Type 2 diabetes mellitus records for a percentage of all suitcases of diabetes. (T2DM).[4]

Diagnosis

Diabetes can be confirmed by a random plasma glucose measurement or two times after a 75 g glucose load >or= 11.1 mmol/L (20.0 mg/dL), fasting plasma glucose > or= 7.0 mmol/L (12.6 mg/dL), or HbA1c >or=6.5%.[6]

Symptoms

excessive thirst, frequent nighttime urination, Intense hunger, hazy vision, tingly or numb hands or feet, and untried weight loss My wounds are healing slowly, my skin is really dry, I'm tired, and I'm getting more infections than normal. [7]

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Complications

Microvascular complications like end-staige renal disease (ESRD), retinopathy, and neuropathy, as well as lower-extreimity amputations (LEA), and microvascular complications like peripheral vascular sickness, coronary heart disease, and stroke, account for the mainstream of the burden associated with diabetes.[8]

Cardiovascular disease (CVD) is one of the main reasons of death and disability in diabetics. It is predicted that the number of people with cardiovascular disease will growth in tandem with the figure of people with diabetes. [9].

Mortality from CVD In the majority of high-income nations, the general population's mortality rates from CVD have decreased. Nonetheless, CVD continues to be a main global reason of death for both diabetics and non-diabetics.[10]

Due to their physical, financial, and psychological costs, lower-extremity amputations (LEAs) are a significant problem for persons with diabetes. Since a number of aetiological pathways are linked to disorders that result in LEAs, LEAs are also a crucial indicator of the effectiveness of preventive care, including that which focuses on managing CVD risk factors, glycaemic control, and screening and treating individuals who are at high risk of foot complications. According to population-based studies, rates of LEAs have generally decreased across a range of demographics between 1982 and 2011 (by approximately 3% to 85%).[11-14]

Treatment

Diabetes management to reach the optimum glycemic control can be broadly classified into:

- Non-pharmacological (ie, lifestyle changes)
- And pharmacological (ie, drugs) interventions. [15]

Oral antidiabetic drugs (OADs) are currently available in six different classes: dipepetidyl peptidase IV inhibitors (like sit gliptin), α-glucoesidase

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inhibeitors (like cargoes), sulfonylureas (like glimepiride), meglitinides (like repaglinide), thiazolidinediones (like pioglitazone), and biguanides (like metformin).[16]

Types of Insulin

Three primary categories of insulins exist:

1. Regular human insulin; 2. Fast-acting; 3. Rapid-acting insulin anailogs (insulin as part, insulin lisper, and insulin glulisine);

2. NPH, or intermediate-acting

3. Long-acting insulin and its analogues, such as Insulin Glargine and Insulin Detemir[18]

Glycemic control

For individuals with type 2 diabetes, the ideal HbA1c value is 6.5%, or 48 mmol/mol [19].

The study examined whether a therapeutic approach aimed at a normal HbA1c of 6.5% would lower the rate of cardiovascular events in middle-aged and older patients with type 2 diabetes compared to a strategy aimed at a HbA1c in the range of 7.9% to 7.9% during the course of the follow-up period, which had a mean of 5.6 years. The study's researchers came to the conclusion that increasing the use of an intensive therapy approach did not considerably lower major cardiovascular events..[20]

Method

A cross-sectional, prospective study was carried out on randomly chosen 100 patients (of both types of diabetes 1 and 2) over the duration of 4 months in Al-Husain general hospital and public diabetes clinic in Al-Samawa city.

Complete prescriptions and all demographic information were gathered using a case record form that had already been created. After being informed of the study's purpose, all diabetes patients who visited the hospital or public clinic were enrolled.

All the data was entered in Microsoft Excel 2010.

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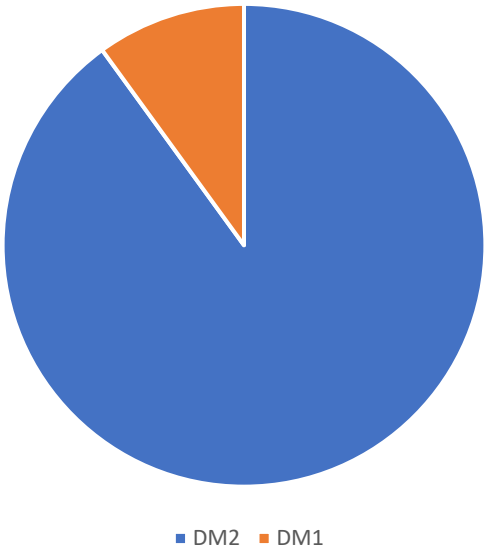
Results

A total number of cases are collected is 100 cases, 54 cases of them use drugs prescribed freely in public clinic and 46 of them use drugs prescribed in private pharmacies.

The number of patients have DM1 is 10 patients and number of patients have DM2 is 90 patients

Figure 1 : Numbers of patients have DM1 and DM2



Males numbers 54 out of 100 (54%) and females 46 out of 100 (46%). There are three age groups the first is less than 25 years old ,second between 25 and 45 years old and third more than 45 years old.

patient have more than 7.5% Hb1Ac level (72%) also (69%) of them have complications and (51%) have good compliance with their medications all data shown in Table 1.

Table (1) Demographic variables

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Variables	Number	percentage
Gender Male Female	 54 46	 54% 46%
Age <25 25-45 >45	 7 35 58	 7% 35% 58%
Hb1Ac =<7.5% >7.5%	 28 72	 28% 72%
Complications Yes NO	 69 31	 69% 31%
Compliance with Treatment Yes No	 51 49	 51% 49%

Type of medication	Number of DM2patients	Number of DM1 patients
Oral	63	3
Insulin	27	10

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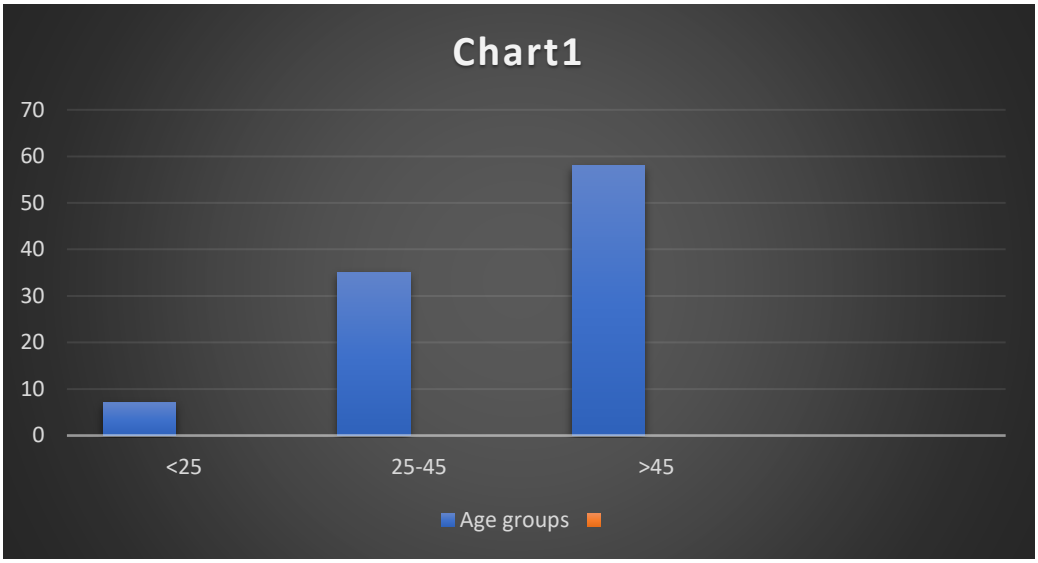

Discussion

Our study was conducted on randomly selected 100 patients (of both types of diabetes 1 and 2) to compare between effectiveness of medications prescribed in public clinic and those prescribed in private pharmacies. The number of males is slightly higher (54 males) compared with females (46 patients)

Most cases occur in age group more than 45years old (58 cases) and most patients have more than 7.5% Hb1Ac level 72 cases (72%) also (69%) of them have complications and (51%) have good compliance with their medications.

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There are 54 patients on public clinic prescribed medications and 46 patients on private pharmacies prescribed medications

	Mean Hb1Ac%	SD	P -value
Patient in public clinic	9.7%	2.46	0.26005
Patient in Private pharmacies	8.5%	2.33	

P<0.5 = significant difference

	Public clinic	Private pharmacies
Patients numbers with >7.5% Hb1Ac	40	24
Patients numbers with <7.5% Hb1Ac	14	22

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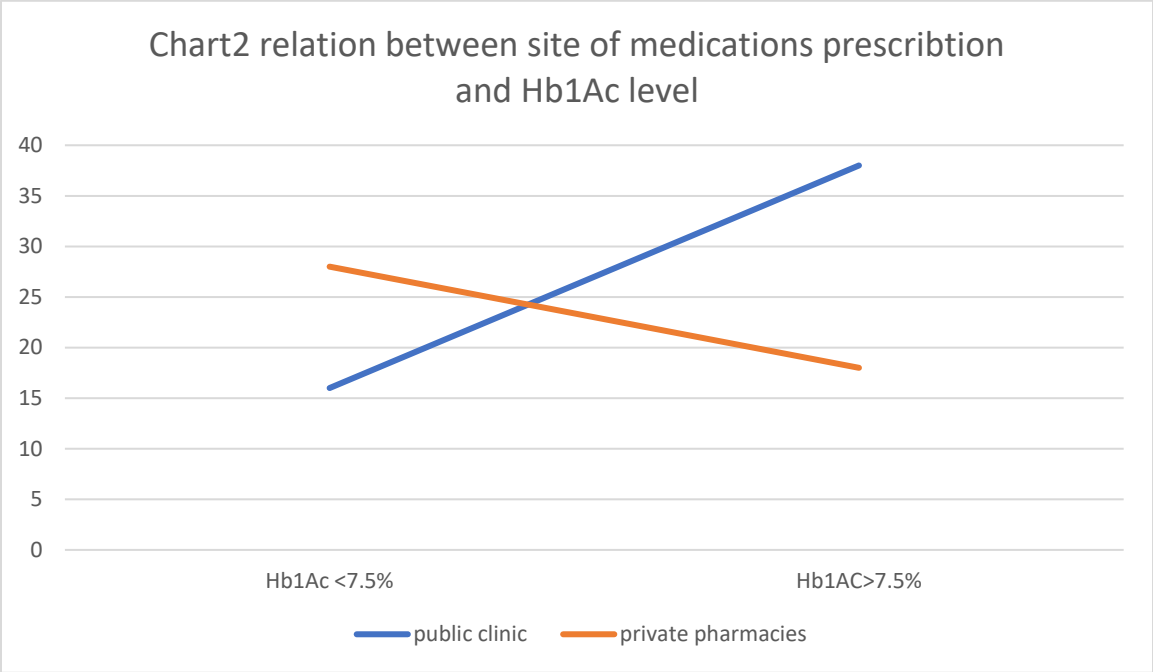

Most reason that patients didn't make regular Hb1Ac tests was financial cause (70%) and negligence (30%)

Most common complication was hyperglycemia (32 out 100)

this study show increase in complication in association with elevation in Hb1Ac levels and duration and this agree with Saremi *et al* (2005)[21]

Conclusion

private pharmacies prescribed drugs have better glycemic control than public clinic prescribed in different ages and sex sample above in Samawa city

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