Medical Journal of Ahl al-Bayt University, Vol.2, No.1, August.2023

Hba1c level among diabetic patients use hypoglycemic agents or insulin comparative study.

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ABSTRACT

Diabetes mellitus is a cumulative disorder that may need more than one plan of drug therapy which include single ,combination or insulin to achieve a good glycemic control .Glycated hemoglobin (HbA1c)is comes from the binding between the glucose molecule and hemoglobin and this combination give us information about the glycemic control of the patient for about three months and therefore this test used for diagnosis of DM .The value of HbA1c that result its represent the amount of glucose in blood .When the patient have a good glycemic control thereby the HbA1c level will be low .This study is conducted to evaluate the effect of different type of diabetes treatment on the glycated hemoglobin (HbA1c) .The 100 patients that involved in the study have a type2 diabetic were evaluated by physician and the patient history,HbA1c ,duration of diabetes and drug therapy .The data were collected and analyzed .The results was no significant between two group of patients that take different types of medications. In conclusion there are many factors that change and affect the HbA1c level in addition to the medication such as food habits ,life style and physical activity therefore for more precise results we need a well controlled study for large number of patients.

Keywords: **Hba1c ,insulin treatment , oral hypoglycemia agent**

INTRODUCTION

Diabetes mellitus is a complex disease that is developed with time lead to more difficult complications. Therefore, this condition is difficult to treat effectively in the long term. Most patients are overweight or obese at diagnosis and are unable to achieve or maintain near normoglycemia without oral antidiabetes drugs. A mojor proportion of patients ultimately require insulin therapy to maintain long-term glycemic control, either as monotherapy or in

combination with oral anti-diabetic therapy. The recurrent for escalate therapy is usually thought to reflect a progressive loss of islet β-cell function in the presence of obesity-related insulin resistance. Today, clinicians have access to a wide range of oral antidiabetic drugs to treat type 2 diabetes. The main classes are heterogeneous behavioral patterns, safety profiles, and portability. These major classes are Drugs that stimulate insulin secretion (sulfonylurea derivatives and short-acting secretory stimulants), drugs that decrease glucose production in the liver (biguanides), and drugs that slow the digestion and absorption of carbohydrates in the intestine (α-glucosidase). inhibitors) or drugs that enhance the action of insulin (thiazolidinediones). Glycated hemoglobin (HbA1c) was first identified as “abnormal” hemoglobin in diabetic patients 40 years ago (12). Since this discovery, many small studies have been conducted to link it to glucose measurements. This led to the idea that HbA1c could be used as an objective measure of glycemic control. HbA1c, also known as glycated hemoglobin, is used to monitor and diagnose diabetes. HbA1c is formed when hemoglobin combines with glucose in the blood and is "glycosylated". The amount of HbA1c produced is directly related to average blood sugar levels over the past 8-12 weeks and is an ideal test for long-term monitoring of blood sugar control in diabetic patients. If diabetes is not properly controlled, average blood sugar levels rise Your HbA1c levels will be high. There are many evidences that maintain the HbA1c value beneath recommended target levels may decrease the risk of long-term vascular complications such as eye disease, kidney disease, and nerve damage.

METHOD OF SOLUTION

Drug therapy

Metformin, sulfonylurea. Fifty subjects in the insulin group received a premixed insulin preparation subcutaneously twice daily before breakfast and at bedtime. The HbA1c value has been determined. The proportion of cases in the group that achieved HbA1c <7% was recorded. Treatment safety was assessed by observing episodes of hypoglycemia. Mild hypoglycemia was a case in which the blood glucose level was below 56 mg / dL with or without symptoms and recovered by self-treatment. Severe hypoglycemia consisted of neurological symptoms and necessary medical procedures

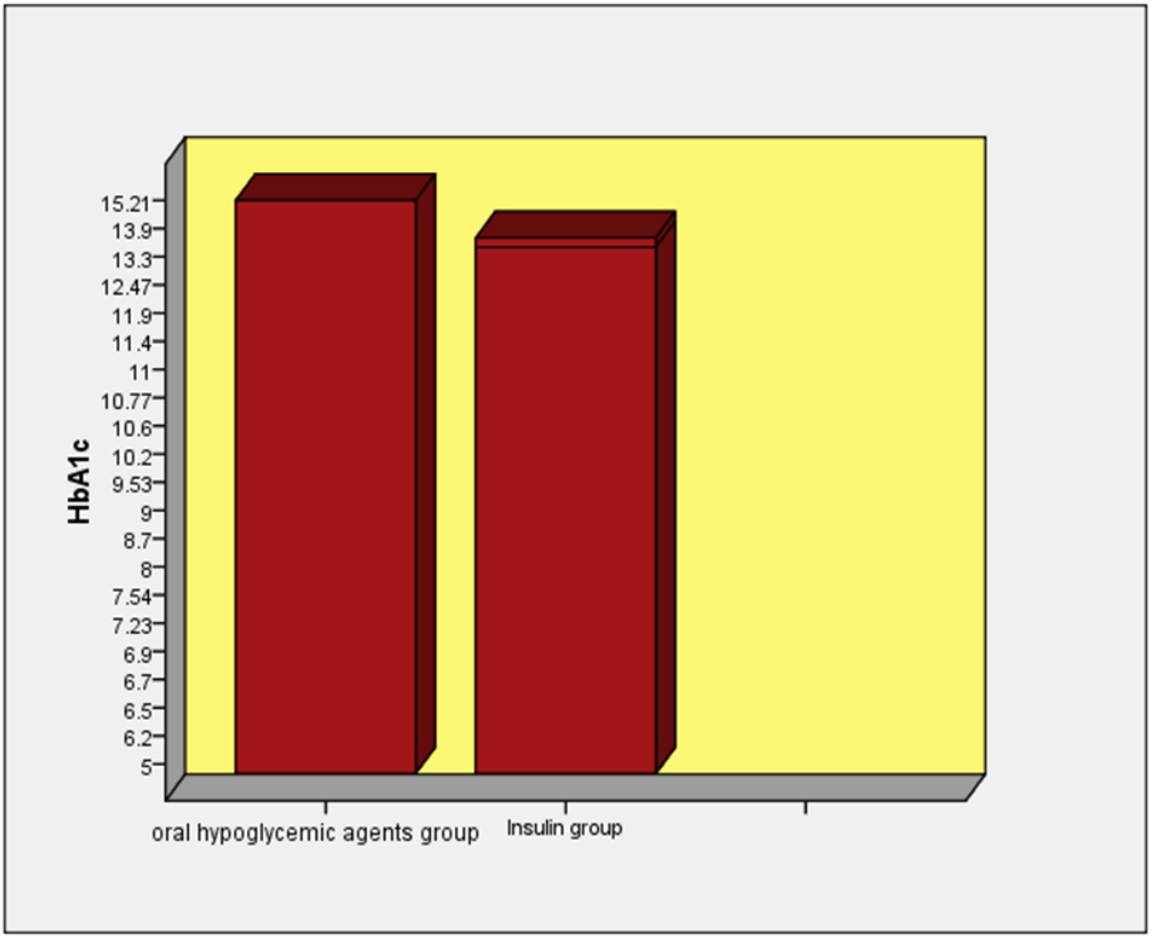
RESULTS AND DISCUSSION

A total of 100 patients were included in the study out of which50% of patients (n = 50) received OHA regimen (group I)and 50% of patients (n = 50) received insulin regimen (group II).

Mean ±SD	Insulin therapy	Oral hypoglycemic agents	P value
HbA1c	9.56±2.24	9.35±2.67	P > 0.05

Age	57.18±8.84	52.76±8.54	P < 0.05

Figure 2. HbA1c (%) of subjects treated with insulin vs OHA



DISCUSSION

Diabetes mellitus is a complicated metabolic disorder that need a combination of drug therapy (11). The American Society for Clinical Endocrinology and the American Diabetes Association recommend restriction of insulin administration for people with type 2 diabetes who have HbA1c value above 9% and are considered to be 10% [10]. The true suggestion of drug is controversial, due to some of different groups of drugs have different safety concerns. Optimal plan for treatment need to address key aspects of insulin resistance and beta-cell destruction to fulfill maintained glycemic control. The benefits and hurt of treatment regimen should be weighed perfectly. HbA1c measurements evaluate the achievement of long-term glycemic goals [5]. Oral medications at the beginning achieve good glycemic control and finally require insulin [12]. Patients with beta-cell impairment receiving optimal oral antidiabetic medications have fasting blood glucose above 140 mg / dL, postprandial blood glucose above 180 mg / dL, and HbA1c 2% above normal limits. Such patients require

extrinsic insulin supplementation [13]. If HbA1c is close to the therapeutic goal, for example 8%, the addition of a third oral drug is considered an option before adding insulin [14]. However, insulin is needed to more decrease HbA1c [15]. The natural history of type 2 diabetes is that most patients develop insulin deficiency to the extent that it justifies the initiation of dietary insulin in addition to basal insulin [16]. You can add fast-acting insulin to one of your daily diets (Basic Plus Regimen). Alternatively, rapid insulin can be added with a meal 2-3 times daily (basic bolus regimen) or switched to premixed insulin [17]. Of course, basal insulin is preferred as an adjunct to hypoglycemic agents. Adherence to the treatment regimen is very important, and the lower number of injections, the perfect adherence to treatment [18]. Factors such as patient preference, life expectancy, duration of illness, comorbidities, socioeconomic status, and patient cognitive abilities guide the choice of treatment regimen. 2. This study showed that premixed insulin regimens have a limited ability to achieve the target HbA1c in only one-third of patients. Premixed insulin reduces medication errors, but limits flexibility in responding to dietary and lifestyle choices. The choice of anti-diabetes therapy also affects the risk of hypoglycemia. Insulin therapy aims to mimic the natural pattern of insulin secretion throughout the day. Therefore, it prevents pre-meal glucose valleys and PPG peaks. Insulin analogs have provided a potential offer of near-physiological insulin therapy [17].

CONCLUSIONS

This study reveals that the use of insulin alone or the oral ant diabetic drug therapy to treat the type 2 diabetes and keep the Hba1c within control level, the two type of therapy have no statistically significant different between patients. However, need more control study include large sample size through long period of time.

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