Short communication

Pattern of blood glucose among diabetic patients in Yemen

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ABSTRACT

The present study was undertaken to evaluate blood glucose levels among patients in two hospitals in Yemen. Patients enrolled as diabetes mellitus were monitored for fasting and random blood sugar. Fifty nine percent of patients tested for fasting blood sugar showed values above 140mg/dl, whilst 84% of patients tested for random blood sugar showed values above 250 mg/dl. Complications with risk factors accompanied diabetic patients like hypertension and retinopathy were also evaluated. The results indicated poor awareness of the disease and the need for efficient application to upgrade the disease control system to safe patient’s life.

Keywords: Diabetes mellitus, Blood sugar, hyperglycemia, complications

1. Introduction

Diabetes Mellitus (DM) is a disease characterized by impaired metabolism of glucose and other energy yielding fuels (Atkinson and Eisenbarth, 2001). DM is also considered a clinical syndrome characterized by hyperglycemia due to absolute or relative deficiency of Insulin. While blood glucose levels are closely regulated in health and rarely stray outside the range of 63-144 mg/dl. (Frier and Fisher, 1999). Two distinct types of DM were identified, type I insulin dependent and type-II non Insulin dependent patients. Control of DM aim at the reduction of fasting blood sugar below 120 mg/dl and random blood sugar below 200 mg/dl. Improper control of DM leads to various complications weather acute or long term one (Pickup and Williams, 1997). The therapeutic target for fasting blood sugar is 80-120 mg/dl and blood sugar below 80 gm/dl or above 140mg/dl is considered a signal for possible intervention. The therapeutic target for bed time (Random) blood sugar is 100-140 mg/dl and
a level below 100 mg/dl or above 160 mg/dL is a signal for possible intervention (Herlitz and Malmberg, 1999). In Yemen there are few studies on the accompanied risk factors for diabetic patients (Akabat, 2009; Gun, 2002). The first author found 59% of the diabetes in Eden are hypertensive while the second author indicate a crude result of hypertension in diabetics reach 13.5%. None of the researchers monitored the retinopathy complication in patients with DM. This short communication aim for assessment of DM control by monitoring state of diabetic patients with identified risk factors like hypertension as a marker for health education and cooperation of diabetics.

2. Methodology

One hundred biochemically confirmed DM patients were monitored for fasting blood sugar (FBS), random blood sugar (RBS) and accompanied risk factors in two teaching hospitals in Yemen.

Out of 100 patients visited the diabetic treatment and consultancy centers in the aforementioned hospitals, 75 were males and 25 females. Age distribution of patients showed that 13 were in age group of 1-20 years, 35 patients in the age group of 20-45 years and the rest of patients which are 52 where above 45 years old (fig.1).

Patients were subjected to investigations concerning the values of (FBS) and (RBS). The patients were subjected to measurement of blood pressure and looked up for other risk factors. Patients were asked to fill a consent form and to fill a standard questionnaire for information regarding the full name, gender, age, date of initial diagnosis of DM, and whether the patient is monitored as hypertensive or not. The date of last check up for blood sugar in both forms was also noted. The data was analyzed and reflections were drained for further advice to maintain media care programs publicity for such patients.

![Fig. 1: Distribution of patients according to age groups](image)
3. Results

From 100 patients tested for FBS, One patient had a value below 80 mg/dl, seven patients with a range of 80-100 mg/dl, thirty three patients with high range of 100-140 mg/dl, twenty with 140-180 mg/dl and 39 with >180 mg/dl (Fig.2).

![Fig.2: Measurement values of fastening blood sugar of diabetic patients.](image1)

The random blood sugar test showed that for 100 patients only 4 patients with value range between 120-180 mg/dl blood sugar, 12 patients with a range of 180-250 mg/dl and 84 patients are above 250 mg/dl (Fig.3).

![Fig.3: Measurement values of random blood sugar of diabetic patients.](image2)

In addition to RBS and FBS, 25% of patients were hypertensive (140/90) mm/Hg and 20% have developed diabetic retinopathy.
4. Discussion

The current work on diabetic patients is dependent on people suffering the disease in two main hospitals in Yemen by which patients were suffering from complications like hypertension and retinopathy. Gun (2002) after a study in Yemen found that the crude prevalence of known diabetes was 6.57% (95% CI: 5.2-8.2) and of known hypertension 13.5% (95% CI: 11.5-15.6). The age standardized prevalence for the age range 30-64 years was 9.75% (95% CI: 7.55-11.95) for diabetes and 17.1% (95% CI: 15.0-19.2) for hypertension. This could be due to the poor awareness of the disease. On the other hand the research work of Akabat (2009) showed 50.9% of patients monitored are hypertensive and conclude that hypertension affects nearly half of diabetics in Yemen which subjected them for more complication in the cardiovascular system. Intensive blood glucose control and control of systemic hypertension reduce the risk of new onset diabetes retinopathy and slow the progression of existing condition (Aiello et al., 2001). However, DM is a systemic disease and thus optimal general health care must include diligent evaluation and treatment of concomitant systemic disorders that influence the development, progression and ultimate outcome of diabetic complications. Kotb et al. (2012) suggested that optimization of these systemic considerations through an Intensive, multi-disciplinary, healthcare team-based approach will maximize general health of these patients. An organized public health approach must be adopted and all stakeholders must work together to control severe disabilities due to DM (Khandekar, 2012). The importance of tight glycemic control in patients especially with type 2 DM can reduce the risk factors and complications to the patients of this multisystem disease (Kotb et al., 2012).

5. Conclusion

DM is a poorly managed and controlled disease in the area of where the study is conducted. The service concerned with health education programs is highly deficient and poorly reflected on the active cooperation of diabetic patients. The outcome advise more care and management to rehabilitate specialized health staff members for treatment of diabetics and established adequate health centers with effective facilities to make the turnover useful for DM patients.

References


