Incidental Finding of Raised Random Blood Sugar in Cases Presenting with Erectile Dysfunction

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Abstract

Background: Background: Erectile dysfunction is quite widely present in our populations, as men wish to maintain sexual desire and function despite aging.

Objective: To determine the frequency of raised random blood sugar in cases presenting with erectile dysfunction.

Methodology: Study design; Cross sectional study. Place of study; Department of Urology, Sheikh Zayed Hospital, Rahim Yar Khan. Duration; January to December 2018. In this study, all the consecutive male cases, with age 20 years or more, presenting with erectile dysfunction of at least one month or more, were included. Raised BSR was labelled when there was a level of random blood sugar was more than 140 mg/dl.

Results: In the present study, there were 100 males with erectile dysfunction, with mean age of 48.67±5.13 year. Raised BSR was seen in 24 (24%) out of 100 cases. There was no significant difference in terms of age, and BMI in both groups, with p values of 0.87 and 0.91 respectively. Raised BSR was significantly high in cases that had duration of erectile dysfunction more than 3 months where it was seen in 21 (31.34%) of cases as compared to 3 (9.09%) of cases with duration less than this with p value of 0.01.

Conclusion: Raised random blood sugar is common in cases with erectile dysfunction and seen in every one out of four cases and is significantly high in cases with duration of erectile function more than 3 months.

Key words: Blood Sugar, Erectile Dysfunction, BMI

Introduction

Erectile dysfunction (ED) is one of the commonly encountered entity at the Urology clinics and is a point of great concern in all age subjects, due to retention of sexual desire despite aging.[1] Its prevalence is highly variable due to difference in the data collection subsets and prevalence of certain diseases across the globe and is found in 20 to 85% of the cases.[1,2]

There are number of underlying etiologies that can lead to this and include all aspects of structural, functions, physiological and psychological factors that result in erectile dysfunction and hence need to be addressed, work out and managed accordingly as it can impact the great burden on one's social, psychological and marital life .[3] Diabetes Mellitus (DM) is one of the biggest concerns in the modern community as its number is on the rise in the developing countries also due to change in the life style, decreased physical activities and more of junk foods. It is a highly morbid condition and can affect the body largely through its micro and macro vascular complications.[4,5]

There is a direct association between erectile dysfunction and DM. The basic underlying pathophysiology comprises a spectrum of abnormalities in neurological, vasogenic and psychological aspects. There is significant impairment in the mechanism of production and attribution of endothelial related nitric oxide in cases suffering from Diabetes Mellitus, which is the major neuronal factor for mediation of corporal smooth muscles relaxation and erection; hence leading to erectile dysfunction.[6] However, there are certain other complications as well, that are indirectly associated with DM as well as ED and these include, Hypertension, obesity, metabolic syndrome, atherosclerosis, autonomic dysfunction, dyslipidaemias etc. it has shown a great negative impact on quality of life in such cases.[6,7]

The risk of ED is highest in cases with DM as compared to all other physiological and psychological factors and data has reported that the ED starts at relatively earlier ages in cases with DM as compared to the same age of the controls. Few of the studies have shown that the degree of uncontrolled DM has also been associated with

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DM.[8,9] This study was planned to assess the frequency of the raised random blood sugar in cases with erectile dysfunction, to quantify this burden that how often erectile dysfunction presents as one cardinal manifestation of Diabetes Mellitus.

Methodology

This cross sectional study was carried out Department of Urology, Sheikh Zayed Hospital, Rahim Yar Khan, between January to December 2018. In this study, all the consecutive male cases, with age 20 years or more presenting with erectile dysfunction of at least one month or more, were included. The cases with already known history of DM, having end stage liver or renal failure or documented cases of any psychological disorder were excluded from this study. Then these cases underwent serum glucose level by simple electronic glucometer.

Raised Random Blood Sugar was labelled as "yes" where the level of this was more than 140 mg/dl. The variables included were; random blood sugar, age in years, duration of erectile dysfunction in months and BMI. The data was analyzed on SPSS version 23.0. Effect modifiers were controlled and post stratification chi square test was applied taking $p \leq 0.05$ as significant. Ethical approval was sought from Institutional Review Board before starting this study and also we ensured informed verbal consent from each study subject for inclusion in study.

Results

In the present study, there were a total of 100 males having erectile dysfunction, with mean age of 48.67 ± 5.13 year and mean duration of erectile dysfunction at presentation was 3.47 ± 0.71 months as shown in table I.

Raised BSR was seen in 24 (24%) out of 100 cases. (Figure I) There was no significant difference in terms of age, and BMI in both groups with p values of 0.87 and 0.91 respectively as shown in tables II. However, raised BSR was significantly high in cases that had duration of ED more than 3 months where it was seen in 21 (31.34%) of cases as compared to 3 (9.09%) of cases with duration less than this, with p value of 0.01 as shown in table II.

Table I: Demographics and clinical variables. (n=100)

Variables	Mean±SD	Range
Age (years)	48.67±5.13	31-67
Duration of ED (months)	3.47±0.71	1-12
BMI (kg/m^2)	28.37±3.11	25-36

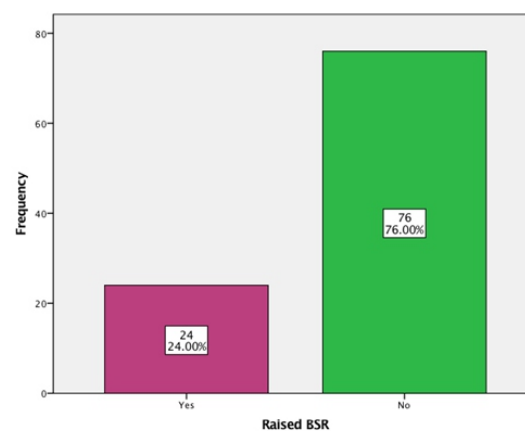**Figure I: Raised Random Blood Sugar in Erectile Dysfunction.**

Table II: Raised BSR and age, BMI and Duration in cases with Erectile Dysfunction. (n=100)

Variable Age	Raised BSR			P value
	Yes	No	Total	
Up to 50 years	6 (23.07%)	20 (76.93%)	26 (100%)	0.87
>50	18 (24.32%)	56 (75.68%)	74 (100%)	
Total	24 (24%)	76 (76%)	100 (100%)	
BMI	**Raised BSR**			**P value**
	Yes	No	Total	
Up to 30	14 (24.13%)	44 (75.87%)	58 (100%)	0.91
>30	10 (23.80%)	32 (76.20%)	42 (100%)	
Total	24 (24%)	76 (76%)	100 (100%)	
Duration of ED	**Raised BSR**			**P value**
	Yes	No	Total	
Up to 3 months	3 (9.09%)	30 (90.91%)	33 (100%)	0.01
> 3 months	21 (31.34%)	46 (68.66%)	67 (100%)	
Total	24 (24%)	76 (76%)	100 (100%)	

Discussion

Diabetes Mellitus has a direct association with erectile dysfunctions, due to dysregulated glucose metabolism and associated micro and macro vascular changes in the body and neuropathies. Type II DM is always a delayed diagnosis as its symptoms

are vague and there is always a lag period of significant time until it is diagnosed. Erectile dysfunction can be one leading symptoms to work up for underlying causes and raised blood sugar levels may indicate an overt underling DM, but the data regarding this was lacking.[10,11]

In the present study, in cases presenting with erectile dysfunction raised BSR was seen in 24 (24%) out of 100 cases. There is not much data to look for an incidental raised glucose level in cases presenting with such dysfunction and majority of the studies have shown its prevalence and association with diagnosed cases of DM.

According to a study done by Thorve VS et al, erectile dysfunction in diagnosed cases of both type I and Type II DM was seen in more than 50% of the cases.[12] According to a study done by Corona G et al which was slightly similar to our study, as they included the cases that were recently diagnosed with DM, and it was observed in their study that the erectile dysfunction is more common in cases with DM and also its development is far earlier and began around 10 to 15 years earlier as compared to the normal controls and they further described that these cases were also resistant to oral therapies prescribed for this dysfunction.[13]

In another study done by Anwar Z et al revealed that out of their 138 cases with DM, 78 (56.52%) cases had erectile dysfunction and the majority of the cases were seen in age groups less than 50 years, but that was an insignificant difference and so was seen in the present study where this prevalence was almost equal with p value of 0.87.[14]

In this study, raised BSR was significantly high in cases that had duration of ED more than 3 months where it was seen in 21 (31.34%) of cases as compared to 3 (9.09%) of cases with duration less than this with p value of 0.01. These results were also supported by the number of studies that have shown that longer duration of hyperglycemia and also the cases that had uncontrolled DM, had the increased risk of developing erectile dysfunction.[15,16] In few other studies they have found that there was linear association with higher levels of HbA1c with the risk of erectile dysfunction.[17,18]

However, in another large survey of 7689 men they evaluated various risk factor for assessment of this dysfunction especially in cases with diabetes and/or hypertension and it was seen that erectile dysfunction according to the IIEF-5 score was present in 67% of those with hypertension alone, in 71% with diabetes alone, and in 77% of men with both diseases, which was almost three times to the present study, but obviously this was seen in cases with established DM.[19]

In a large study comparing healthy controls, the cases with hypertension and those with DM, for assessment of erectile dysfunction they analyzed 145 studies and on extensive analysis, it was observed that the overall prevalence of erectile dysfunction in diabetes was 52.5% (95% CI, 48.8 to 56.2) after adjusting for publication bias, and 37.5%, 66.3% and 57.7% in Type 1, Type 2 and both types of diabetes, respectively (P for interaction < 0.0001).

The prevalence of erectile dysfunction was highest in studies using the Sexual Health Inventory for Men (82.2%, 17 studies, P for interaction < 0.0001). Studies with a higher percentage of people with hypertension moderated our results (beta = 0.03; 95% CI, 0.008 to 0.040; P = 0.003; R2 = 0.00). Compared to healthy controls (n = 5385) men with diabetes (n = 863) were at increased odds of having erectile dysfunction (OR 3.62; 95% CI, 2.53 to 5.16; P < 0.0001; I 2 = 67%, k = 8). Erectile dysfunction is common in diabetes, affecting more than half of men with the condition and with a prevalence odd of approximately 3.5 times more than controls. So they also recommended further in their study that there should be regular screening for the cases with erectile dysfunction for glycemic levels to detect early diabetic changes and might be the presentation of both type I and type II DM.[20]

Conclusion

Raised random blood sugar is quite common in cases with Erectile Dysfunction and seen in every one out of four cases and is significantly high in cases with duration of Erectile Dysfunction more than 3 months. It is suggested that in cases of Erectile Dysfunction, the treating Physician should consider high blood sugar level as a possible cause and should advise blood sugar testing.

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