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VULVOVAGINAL CANDIDIASIS AS A PRESENTING SYMPTOM OF DIABETES MELLITUS – A PROSPECTIVE STUDY

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ABSTRACT Vulvovaginal candidiasis is a common infection worldwide with dramatic increase in its incidence in the past decade. This article describes about patients with severe, recurrent, or refractory VV attending O.P.D who were advised blood sugar levels based on these symptoms and were diagnosed to have high blood sugar levels for the first time and all patients were unaware of this fact. The aim of this study was to detect undiagnosed DM in cases presenting with VV. All patients attending clinic with complaints of itching or burning in private parts, painful intercourse, rashes in vulvar and groin area, burning sensation while passing urine, recurrent boils in genitalia. In our study maximum patients were above 40 years of age and 65% had attained menopause. 10% cases had positive culture report for Candida albicans. Recurrent VV is a red flag for poorly controlled DM, and should prompt early detection and control of blood sugar levels.

KEYWORDS : Vulvovaginitis, Candidiasis, Diabetes Mellitus.

INTRODUCTION

Vulvovaginal candidiasis is a common infection worldwide with dramatic increase in its incidence in the past decade. Type 2 Diabetes Mellitus (DM) is a pandemic affecting both developed and developing nations. In 1964, about 30 million individuals had DM and the counts rose to 171 million individuals in a span of lesser than 40 years (1). In 2015, about 415 million patients within age group of 20-79 years were found to be diabetic, accounting for an 8.8% prevalence worldwide. By the year 2040, the counts might increase to 642 million persons, making the prevalence rate 10.4% worldwide. One of the complications experienced by diabetic patients is resistant and recurrent vulvovaginal infections and is linked to poor glycaemic control. Many patients are diagnosed to have DM when they present with symptoms of vulvovaginitis (VV). Others experience episodes of uncontrolled or refractory hyperglycaemia which can be attributed to untreated VV. This article describes about patients with severe, recurrent, or refractory VV attending O.P.D who were advised blood sugar levels based on these symptoms and were diagnosed to have high blood sugar levels for the first time and all patients were unaware of this fact.

AIMS AND OBJECTIVES

The aim of this study was to detect undiagnosed DM in cases presenting with VV. The primary objective was to evaluate causes of VV, and find a correlation whether adequate glycaemic control leads to quick symptom relief along with antifungals and prevents recurrent VV. Secondary objectives were to evaluate quality of life improvement, acceptance of life style modification and drugs to achieve adequate blood glucose levels.

MATERIAL AND METHODS

This study was carried out in Shri Balaji Institute of Medical Sciences, Raipur, from 1st February 2021 to 31st December 2022. This was prospective study including 100 patients.

Inclusion Criteria-

All patients attending clinic with complaints of itching or burning in private parts, painful intercourse, rashes in vulvar and groin area, burning sensation while passing urine, recurrent boils in genitalia.

Exclusion Criteria-

Known cases of DM, Immunocompromised patients, having drug addiction, on immunomodulatory drugs, having pregnancy, morbid obesity, having vulvar pathologies like Krause's vulvae, vulvar malignancies, previously treated cases of VV, having comorbidities like severe anaemia, autoimmune disorders, cases undergoing chemotherapy and radiotherapy, on prolonged use of broad-spectrum antibiotics, not willing for long follow-up.

All patients fulfilling inclusion criteria and willing to participate in study were included. The Institutional Review Board approval was obtained. Clinical information, demographic data and information on clinical investigations were collected from the electronic medical records. Physical examination and vaginal swab for culture and sensitivity to antibiotics was done on initial visit. Random blood sugar (RBS) was done and if suggestive of DM [cut offs given by WHO were used (12)], then immediate therapy started for VV and DM and follow up with culture reports done on 4th day and treatment revised as per reports. In cases where RBS was normal further fasting, postprandial blood sugar levels, if required glucose tolerance test and glycosylated haemoglobin levels were advised.

On follow up visits patients were asked about symptom relief and further treatment continued as required. Topical agents, oral antimycotics and oral hypoglycaemic agents were used in treatment as per standard protocols.

Frequency and percentages were calculated for categorical variable. The SPSS version 22.0 software program was used for statistical analysis.

RESULTS

In our study maximum patients were above 40 years of age and 65% had attained menopause.90% patients were literate and genital hygiene was satisfactory in 95% cases. Only 30% patients had regular sexual activity (TABLE-1). Itching and burning sensation in private parts was the complaint in 80% cases (TABLE-2). 35% cases had RBS levels >200mg/dl and 62% cases had glycosylated haemoglobin >6.5 mg/dl (TABLE-3). 10% cases had positive culture report for Candida albicans (TABLE-4). Only 50% cases were willing to take oral hypoglycaemic agents for adequate control of blood sugar levels (TABLE-5).

DISCUSSION

DM is an endocrine disorder that renders the individual very prone to getting infections because of immune damage. Recurring candida infections are a prominent sign of DM that sometimes facilitates the identification of an individual is prediabetes (FBS- 100-125 mg/dl) or diabetic condition. Vulvovaginal candidiasis (VVC) is most often caused by Candida albicans (3) Pruritus, vaginal soreness, dyspareunia, and thick white curd like vaginal discharge are frequent symptoms. Women with severe VVC, recurrent VVC should be checked for DM. (2). Different studies have found

that symptomatic infection is more common in women with DM than normal population (4). In our study candida albicans was found positive on culture in 10% cases while O.T. Malazy etal (5) found positive reports in 8.8% cases. Candida glabrata is another dominant species responsible for VV in culture negative reports. The probable cause of higher non-albicans species is short duration use of oral or local anti –fungal regimens, widespread use of over-the-counter antifungal agents, most of which are used incorrectly or inadequately, and the prolonged use of antifungal compounds for the prevention of recurrent VV. Women with uncontrolled blood glucose levels may have VVC as a presenting symptom. In our study we found that all our cases were either having impaired GTT or frankly diabetic. Adequate control of blood glucose levels and a suitable antifungal therapy play an important role in controlling VV. If only antifungals are used without normalising blood sugar levels, than it might lead to severe, recurrent or complicated VV.

VVC is more frequent among sexually active women still it is not considered as a sexually transmitted disease. Candida accounts for 20-50% of the normal vaginal flora of asymptomatic healthy women and Candida vaginitis can occur even in single women. We found that 70% of our patients had either occasional or no intercourse. This can be attributed to painful intercourse because of vulvar excoriation making these women sexually inactive.

We found that all patients were willing to take any medication to get immediate relief from symptoms but when explained about long term use of oral hypoglycaemic agents 50% patients refused to do so.30% patients opted for dietary and life style modifications or use of alternative therapies like Ayurvedic medicines.

CONCLUSION

DM is a known predisposing factor of VVC, primarily because of hyperglycaemia induced alterations including decreased motion of neutrophils, chemotaxis, phagocytosis, and microbial killing. Increased glucose levels in genital tissues enhance yeast adhesion and growth. Treatment of VV cannot be successful unless diabetes is detected and well controlled. Recurrent VV is a red flag for poorly controlled DM, and should prompt early detection and control of blood sugar levels.

Table-1 Patient Profile

VARIABLES	NUMBER (N=100)	PERCENTAGE
AGE (IN YEARS)		
30-40	20	20%
40-50	32	32%
50-60	18	18%
>60	30	30%
MENOPAUSAL STATUS		
Premenopausal	35	35%
Menopausal	65	65%
OCCUPATION		
Working	45	45%
Housewife	55	55%
EDUCATION		
Illiterate (Incomplete primary education)	10	10%
Literate	90	90%
GENITAL HYGIENE		
Satisfactory	95	95%
Unsatisfactory	05	05%
SEXUAL RELATIONSHIP		
Regular	30	30%
Occasional	50	50%
No	20	20%
HISTORY OF ALLERGY		
Yes	08	08%
No	92	92%

Table – 2 Presenting Symptoms

VARIABLES	NUMBER (N=100)	PERCENTAGE
Itching and Burning in Private Parts	80	80%
Burning Micturition	10	10%
Coital Difficulty	05	05%
More than one symptom	05	05%

Table – 3 Blood sugar status

VARIABLES	NUMBER (N=100)	PERCENTAGE
FBS LEVEL		
<126 mg/dl	60	60%
>126 mg/dl	40	40%
RBS LEVEL		
<200 mg/dl	65	65%
>200 mg/dl	35	35%
GLYCOSYLATED HAEMOGLOBIN		
<6.5 mg/dl	35	35%
>6.5 mg/dl	62	62%

Table-4 Type Of Infection

	Positive candida culture	Negative candida culture
Clinical Candida vaginitis	10	90
Mixed infections	20	80

Table-5 Acceptance of Treatment of DM

VARIABLES	NUMBER (N=100)	PERCENTAGE
Willing to take oral hypoglycaemic agents	50	50%
Willing for lifestyle modification only	20	20%
Willing for ayurvedic medicines only	30	30%

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