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## A Case Control Study of Pap smear in Diabetic Patients.

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### ABSTRACT

The infections of the genital tract are common in reproductive-age women and the associated cost is significant. Diabetes mellitus is commonly considered a predisposing factor for recurrent vulvovaginal candidiasis. Hyperglycemia enhances the ability of *C. albicans* to bind to vaginal epithelial cells. We analyse the prevalence of correlation of inflammation and *Candida* in particular in papsmear in women with diabetes mellitus in comparison to normal nondiabetic women. A retrospective study was carried out in Sree Balaji Medical College in which pap smears were reviewed in 100 non pregnant women enrolling for WOMEN CARE CHECK-UP. The study was carried out in 33 diabetic and 67 normal healthy women as controls, all in age range between 28-66 years. Inflammatory changes were seen both in diabetic and non diabetic women. Prevalance of candida was found to be more in diabetic women as compared to non diabetic women which was found to be statistically significant. Diabetes mellitus has been considered as one of the factors causing *Candida* vaginitis. It is mandatory to do periodic papsmear review for all diabetic females for early diagnosis and effective treatment of candidiasis.

**Keywords:** PAP smear, diabetes mellitus, candidiasis. vulvovaginitis

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### INTRODUCTION

Diabetes mellitus is a chronic, insidious disease that can affect any system of the body. One of the problems associated with it is infection. Among the infections, vaginal infection, especially fungal vaginitis, is more unsettling in severe hyperglycemic conditions [1]. Diabetes mellitus is commonly considered a predisposing factor for recurrent vulvovaginal candidiasis. Hyperglycemia enhances the ability of *C. albicans* to bind to vaginal epithelial cells [2].

### MATERIALS AND METHODS

A retrospective study was carried out in SBMCH in which pap smears were reviewed in 100 women enrolling for WOMEN CARE CHECK-UP during the period of January 2014 to June 2015. The study was carried out in 33 diabetic and 67 normal healthy women as controls, all in age range between 28-66 years. Control group consisted of healthy individuals free of any systemic diseases.

### EXPERIMENTAL

The PAP smears were analysed in the Department of Pathology, Sree Balaji Medical College, Chennai, Tamil Nadu, India.

### RESULTS

Inflammatory changes were seen both in diabetic and non-diabetic women (Fig1). Prevalence of candida was found to be more in diabetic women as compared to non-diabetic women which was found to be statistically significant (Fig. 2 & 3).

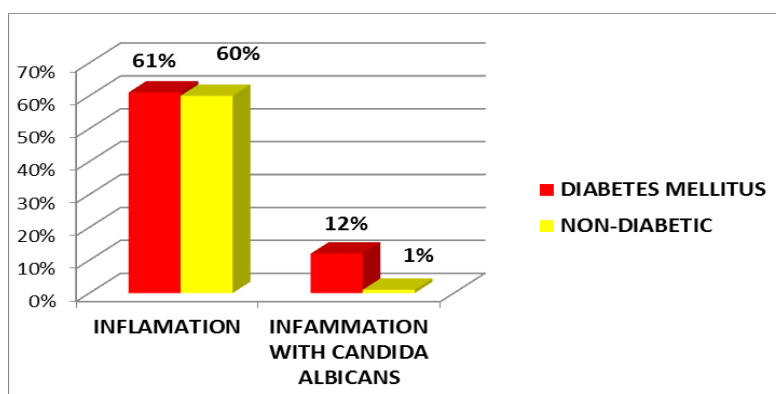


Figure 1: Bar diagram showing PAP smear of diabetic and non-diabetic patients

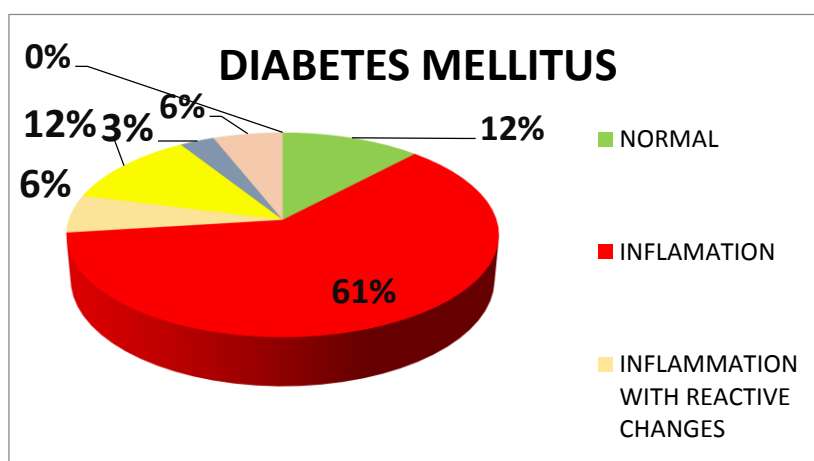


Figure 2: Pie diagram showing PAP smear of diabetic patients

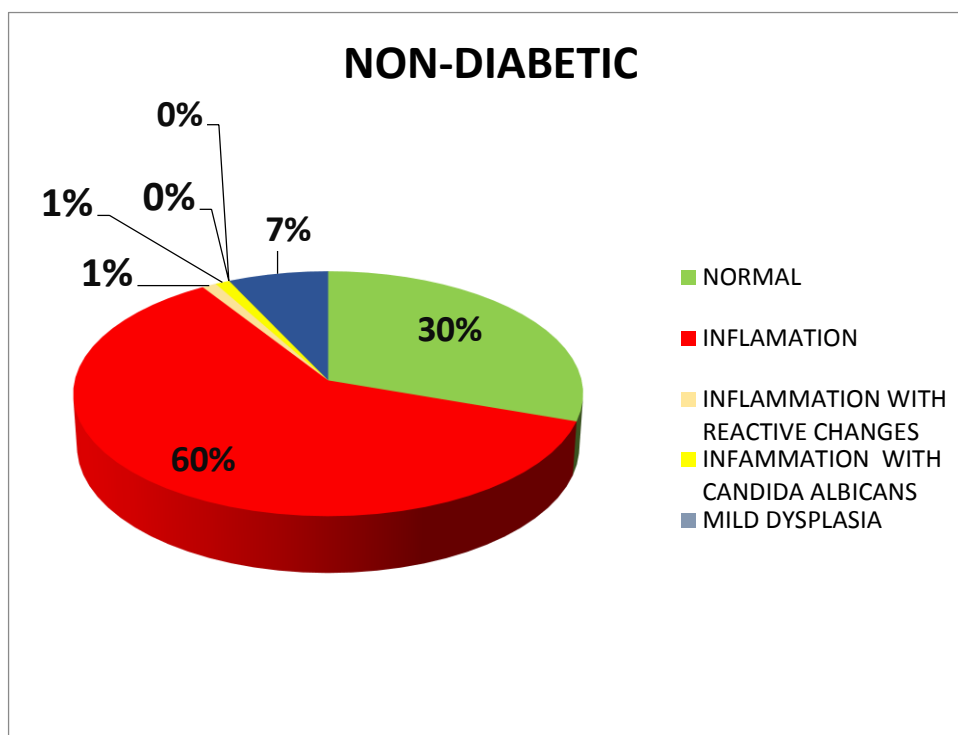


Figure 3 : Pie diagram showing PAP smear of non-diabetic patients.

### DISCUSSION

Cervical infections are commonly encountered problems in women. PAP smear technique is extremely useful for diagnosis of fungal infections like Candida. Candida is a diploid fungus that grows both as yeast and filamentous cells and causes opportunistic oral and genital infections in humans[3]. Patients may be asymptomatic ,or they may complain of burning, itching and a thick ,cheesy discharge. PAP smear finding of candida species facilitates an early diagnosis and prompt treatment. Inflammation of the cervix caused by infectious or non – infectious agents which persist for a period of time may progress into cellular changes and then into cervical cancer if neglected [4].It is mandatory to do periodic papsmear review for all diabetic females for early diagnosis and effective treatment of candidiasis.

In our study we found that inflammatoty changes were prevalent in both the groups. However prevalence of candida was found to be more in diabetic women. This could be due to persistent hyperglycemia in diabetic that enhance the ability of C.albicans to bind to vaginal epithelial cells. Chronic infection could also lead to cellular changes and dysplasia and this could be the reason for increase in prevalence of mild to moderate dysplastic changes in diabetics. More studies involving greater sample size is necessary.

### CONCLUSION

Diabetes mellitus has long been considered as one of the factors causing Candida vaginitis due to uncontrolled blood glucose levels. The control of blood glucose levels and a suitable antifungal therapy play an important role in controlling vaginal Candida infection in diabetic women [5].

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