PREVALENCE OF VULVOVAGINAL CANDIDIASIS (VVC) PREVALENCE AMONG PREGNANT WOMEN ATTENDING RAFINDADI CLINIC KATSINA, KATSINA STATE NIGERIA

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Abstract
The fungus Candidaisanaturally occurring micro organism in the vaginal area known as Volvovaginal Candida (VVC). Alactobacillus bacterium keeps its growth in check. Butifthereisan imbalance in your system, these bacteria will not work effectively. This lead stoanover growth of yeast, which causes the systems of virginal yeast infection. A total of one hundred (100) urine samples were collected from pregnant women attending who reported complain sofgenital disease cases at Rafindadi clinic for the period of two weeks. The samples were grouped into year- range,ranging15-25,26-35,36-45,46-55,and 56- 5. The samples were treated cultured invitrousing analyzed into invitrous ingdextrosesugar as a medium for growth. Results from the laboratory investigation revealed that 48(48%) women were vulvovaginal Candidiasis positive due to vaginal secretion of oestrogen into the vagina;also high consumption of oral contraceptive was identified to be the reason associated with age which coursed decreases resistance to vulvovaginal Candidiasis infections. There is decrease in the number of vulvovaginal Candidiasis cases in women with year ranges 35-45 25(25%), followed by 15-25 16(16), 45-55 7(7) and 55-65 4(4) respectively. It is recommended that routine screening of sexually transmitted diseases among pregnant women should be encouraged and incorporated into antenatal care for all women.

Keywords: Pregnancy, Prevalence, Vulvivaginal Candidiasis, Women

Introduction
Vulvovaginal candidiasis (VVC) is a fungal or yeast infection of the female lower genital tract (the vulva, and the vagina) caused by *Candida* species. It is often referred to as candidiasis or relapsing VVC.This condition affect more than 50% of healthy women .*C albican* is the frequent colonizer, and is incriminated in most cases of VVC Nevertheless, over the last ten years, research evidence has demonstrated an increments in the frequency of cases caused by non albicans species, with C.glabrate consistently being the leading species. About 75% of women will experience at least one episode of VVC during their lifetime. In fact, 70-75% of healthy adult women will by the age of 25 years have had one episode of VVC diagnosed by physician (Najar and Banday, 2015).

The prevalence of vulvovaginal candidiasis generally peaks in women aged 20-40 and it is a highly common infection that most of the female population will experience on at least one occasions. The prevalence in pregnant women is high because pregnancy creates a climate favorable to the growth of Candida albicans, and this yeast often is

difficult to eradicate completely even with treatment (Likit & Guzel,2011).Factors were identified to influence the growth of *Candida* species which include refined sugars, crabs and high lactose dairy products. Eating too many of these foods may promote infection if you have suppressed immune system. An over growth of Candida can cause conditions like athletes' foot, ringworm and toe nail fungus.

Candidiasis is the most common legion diagnosed in nearly one quarter of HIV infected women and oral candidiosis was the common and highly associated with low CD4 cell count (Martin, 2016).Also it was reported that over 50% of the pregnant women consulting health services for virginal discharges in Nairobi, Kenya had candidiasis and among the pregnant woman, age dysuria and fever were significant infection were young age and low level of education. In a related study carried out in Ilorin kwara State, Nigeria, Abiyeji and Nwabuisi (2013) reported that 114(49%) of the subjects harbored various agent including Candida species. Risk factors associated with significant infection were young age and low level of education.

Previous findings have provided data on the incidence of VVC. It is interesting to note that most previous studies focused on immune compromise subjects, especially pregnant women, diabetic therapy, women on oral contraception with high estrogen content, and HIV positive subjects, with few studies on otherwise immune competent women (Say, 2015).

The normal vagina is characterized by dynamic interrelations between lactobacillus acidophilus and other endogenous flora,estrogen, glycogen vaginalpH, and metabolic by-product products of this micro biome.L. Acidophilus produces hydrogen peroxide (as a by-product of metabolism), which is toxic to pathogens and keeps the healthy vaginal micro flora have been already altered by invading pathogens or biochemical changes in the environment. Changes in the vaginal environment encourage the Candida population, enhanced their adherence to the vaginal epithelial cells and facilitate germination of daughter yeast cells. These changes may transform asymptomatic colonization into symptomic Candida infectionVVC,like many vulvar diseases, has the potential to cause great psychological distress and negatively impact a patient's quality of life (Sobel and Chain, 2014).

Some predisposing factors include pregnancy, where high prevalence is found, abuse and prolonged use of antibiotics such as Amoxillin, consistent use of oestrogen and progesterone use and other immune suppressive therapy (Achkar and Fries, 2015).people with oral infections have white patches in the month, Vaginal infections experience burning sensation and may experience some vaginal discharge, men may have itching rash on the genital area. Dada (2015) examined 3089 patients and 304(9.4%) use tight clothing and nylon under wears and this may be responsible for the increase in the incidence of Candidiasis among women. Brandt (2016) reported that pregnancy and oral contraceptives may depress T-lymphocytes proliferation and decrease ability to resist Candida infections Other factors that may increase the risk of valvovaginal Candidiasis include severe metabolic disorder such as Addisons disease, cushings disease, diabetes and hypo or hyperthyroidism. All these will weaken immune system and increase iron deficiency .In about 70% of cases, Candida albicans is isolated with two or more species in combination e.g. C. glabrate, C.tropcalis, being most frequent diagnosed species in combination (Mahamoudabadi, 2017).

Seventy percent of adult women had at least one episode of virginal infection during their life time (Piot, 2015).It has also been established that C. albican are transmitted sexually anbeing an organism that is prevalent in the gastro-intestinal tract, the practice of oral and anal sex will perpetrate the infection (Bang, 2014).
The aim of this research work is to investigate for the presence of virginal fungal candidiasis among pregnant women attending Rafin Dadi Clinic.

Research questions
1. Do pregnant women attending Rafin Dadi clinic have problem of candidiasis?
2. What are the risk factors associated with prevalence of candidiasis among pregnant women?

Objectives of the study
1. To determine the prenalence of virginal candidiasis among pregnant women attending Rafin Dadi Clinic.
2. To determine the prevalence 0f candidiasis in relation to age.

Materials and Methods
Total of sample of 5mls of early morning urine samples was collected from one hundred pregnant women attending anti-natal unit at Rafin Dadi Clinic using sterile sample bottles. The samples collection targeted first ten women who reported first to the clinic for a week (Monday to Friday) until a total samples were collected. Sample bottle were closed and labeled appropriately. One ml of the well mixed urine collected were aseptically transferred into a labeled centrifuge tubes, and centrifuged at 1000rpm for 15 minutes and the supernatant fluid discarded by inverting the tube.
The laboratory analysis was carried out by simple microscopic examination of the fungal cells. This is followed by Gram staining technique of the urine and vaginal fluid discharge. Spores pseudohyphae were observed under the microscope. The examined samples were grown on Sabouraud dextrose agar (SDA), and the creamy colored pasty colonies were observed after 24 hours of incubation at 37Oc, with characteristics yeast smell. About 0.5ml of human serum were mixed with yeast colonies from the Sabouraud plate was heated slightly in the water bath and incubated at 35-37°C for two hours.
Using Pasteur pipettes drops of the serum-yeast culture was transferred to a glass slide and examined under the 10 and 40 objective of microscope. The observed sprouting yeast cells with tube-like outgrowth from the cells were positive for valvovaginal Candida.

Results and Discussion
This study determines the Vulvovaginal Candidiasis (VVC) prevalence among pregnant women aged 15-65 years attending Rafin Dadi clinic. Results from the laboratory investigations revealed that out of the one hundred (100) pregnant women tested for Vulvovaginal Candidiaasis forty 48(48%) between the ages of 25-35 were found positive as shown in the table. The reason given by the women when interviewed for the high rate, it was revealed to be due to abuse and prolonged use of antibiotics

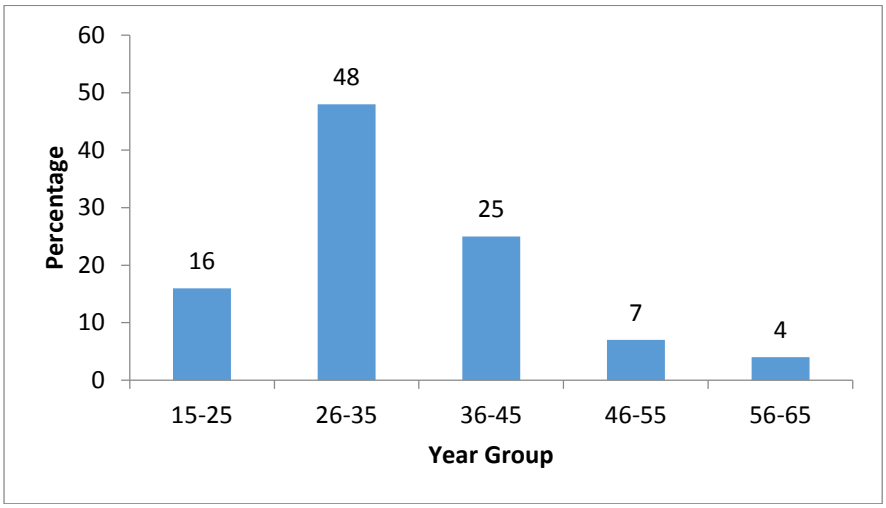
because of high frequencies of sexualities. This is in line with the findings of Achkar and Fries (2014) where he reported that High prevalence of vulvovaginal Candidiasis among middle age women 25-35 was due to prolonged use of antibiotic and more engagement in sex, oestrogen and progesterone use and other immune suppressive therapy, and also as it was disclosedthe Candidiasis infection are common during pregnancy when the acidity and sugar content of the vaginal secretion are altered and it create favorable environment for fungal growth and this was found to be in line with the findings of (Sobel and Chain, 2015).

Slide showing tube-like outgrowth of cells (Vulvovaginal Candida)

Table 1: Prevalence of Candidiasis among Pregnant Women attending Rafin Dadi Clinic

Age Ranges	Prevalence(%)
15 – 25	16(16)
26 – 35	48(48)
36 – 45	25(25)
46 – 55	7(7)
56 – 65	4(4)
Total	**100**

Source: Field Work, 2019.



Bar Chart Showing Distribution of Candidiasis among Pregnant Women

The second high prevalence rate isseen in women aged between 35-45 this could be due to poor personal hygiene, this was found to be in accordance with the results findings of (Dada, 2013) and that of (Kao, 2014) who reported that women who are pregnant particularly in their third pregnancy are more likely to suffer the disease condition due secretion of ostrogen. At this stage of age there is high consumption of oral contraceptives which are likely to depress the T lymphocytes proliferation which could decrease resistance to Candida infection. The high occurrence among women aged between 25-35 years was attributed to inexperience and lack of proper knowledge of Candidiasis, hence decreases with second and third pregnancy. Candida species commonly colonize the mucosal surfaces, and their ability to invade and cause infection is initially dependent on binding fibronectin a component of the host extracellular maxrix may play a role in the initiation and dissemination of Candida albican infections Hydrophobic molecules present on the surface of Candida species also appears to be important in pathogenesis,and there is a strong correlation between adhesion and surface hydrophobicity.The most frequent manifestation of genitourinary Candidiasis include Vulvovaginal candidiasis in women. (Achkar and Fries, 2015).

The low prevalence of vulvovaginal candidiasis in younger women aged 15-25was due to low use of contraceptives and that of antibiotic. This was in line with the results findings carried out by (Merot, 2014) who reported that 75% of younger women did not suffered vulvovaginal Candisiasis during theirearlier reproductive lives.

Conclusions

Volvovaginal candidiasis was found to be prevalent among women of all ages but was found to be highest among women of 25-35 age group.

Recommendations

Based on the findings the following recommendations are made:-

1. Pregnant women especially of age ranging 25-35 should stop using high level sugar diet for the reason that Candida coursing organisms feed on sugar and high lactose dairy products which encourage the growth of the candidiasis .Eating fewer of these food substances helps prevents candidiasis.
2. Maitaining a healthy weight in pregnant women because women with overweight may have larger skin fold that traps inn heat and moisture making environment for organismsto shrive.
3. Encouragement of good hygiene among pregnant women, pregnant women should avoid cleaning genital with scented products, which can irritate such delicate place. Observing vaginal hygiene in pregnant women by avoiding douching which can course an imbalance in bacteria which control the population of fungi in their vagina, resulting in an overgrowth of fungi causing candidiasis.
4. There should always be an immediate change of damp clothing, such as after exercise, and also wearing of underwear's made from breathable materials such as cotton

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