Factors associated with vaginal canediasis in pregnant women: What the publications exhibit


Descritores: Candidiase; Gestação; Prevalência; Fatores de risco.

ABSTRACT | Objective: to analyze the factors associated with vaginal candidiasis in pregnant women. Method: This is an integrative literature review carried out at PubMed. The descriptors were used: “pregnant women”, pregnancy, candidiasis, “candidiasis, vulvovaginal”. At the end, 07 studies were selected and the search period took place between the months of November and December 2021. Results: vulvovaginal candidiasis had an average general prevalence of candidiasis of 51.71% of the cases mentioned in the studies. Among the clinical manifestations of candidiasis, there is an altered discharge, intense itching, dysuria, irritation or burning and pelvic pain. Conclusion: Candida albicans was the most frequently identified yeast strain, but other species were also described, such as C. krusei, C. glabrata, Candida parapsilosis and C. tropicalis. Candidiasis is not lethal, but the symptoms can define the clinical diagnosis of candidiasis, in pregnancy, early diagnosis guides efficient treatment and contributes to improving the prognosis of the pregnant woman. Keywords: Candidiasis; Gestation; Prevalence; Risk factors.

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Palabras claves: Candidiasis; Gestación; Predominio; factores de riesgo.

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INTRODUCTION

The prevalence of vaginal candidiasis in pregnant women is high and is caused by a wide variety of Candida species. The lack of early diagnosis
and adequate treatment during prenatal care can have serious implications. Performing a search in indexed databases, a scarcity of integrative reviews related to the theme was identified, which aroused our interest in investigating the diversity of non-albicans and albicans Candida in this clientele.

It is common in the gestational period to cause changes in internal and external factors, which contribute to the appearance of bacterial vaginosis and vaginal fungal infections. These changes culminate in colonization by microorganisms that may be linked to complications during pregnancy, childbirth and the puerperium. In the gestational period, women have high levels of estrogen, which lasts throughout pregnancy, as well as an abundance of glycogen in the vaginal mucosa, which culminates in fungal growth, obtaining an accentuated reserve of usable sugars for the nutrition of pathogens. 

In the female genital tract, several agents are related to the microbiota, such as Candida albicans; Trichomonas vaginalis; Gardnerella vaginalis; Chlamydia trachomatis, being among the vaginitis the most mentioned by pregnant women as complaints in prenatal care. The Candida is normally found in the human microbiota, this fungus maintains a commensal relationship with the individual. However, as a consequence of an imbalance of the microbiota or an inefficiency of the immune system, they can become opportunistic agents. Fungi of the Candida albicans genus have high prevalence in pregnant women.

Pregnancy provides the woman with a series of physiological, hormonal and emotional changes enabling the development of fungal infections such as vulvovaginal candidiasis (VVC). Its prevalence is between 28% and 38%. The predisposition of pregnant women is higher than that of the general population, caused by the increase in cervicovaginal secretions with a decrease in the local response, associated with the progestogenic action on T lymphocytes and the anti-activity of polymorphonuclear cells. VVC is an opportunistic infection of the vaginal mucosa, considered the second most frequent vaginal infection that affects women of reproductive age. Approximately 75% of women at least once in their lives develop candidiasis, and 50% of them also experience a single recurrence.

In Brazil, the prevalence of candidiasis during pregnancy ranged from 11.8%, while in Argentine women it was 28%, in Turkish women it was 37.4%. In India it was 38% where 27% were symptomatic and 11% were asymptomatic. Approximately 50% of the asymptomatic patients evaluated presented some state of vaginal dysfunction and close to 30% of the symptomatic ones did not show any morphological alteration of the vaginal contents.

The presence of this infection is related to the appearance of complications in pregnant women such as: premature rupture of membranes, premature labor, chorioamnionitis and congenital cutaneous candidiasis. It is noteworthy that the most common symptoms of vaginal candidiasis in pregnant women are: vaginal discharge similar to cottage cheese, vulvar swelling, itching, pain, irritation, burning sensation on urination, dyspareunia and dysuria. Thus, in view of the above, the question that guided the construction of the article was which factors are associated with vaginal candidiasis in pregnant women? The present study aims to analyze the factors associated with vaginal candidiasis in pregnant women.

METHOD

It is characterized as an integrative review. This procedure was selected because it allows the synthesis and analysis of scientific knowledge already produced on the subject. From the chosen theme, it determined the construction of the PICOT strategy where it was selected: POT that represents Problem (P), outcome (O), and (T) types of studies, in which it was used to generate the guiding question of this integrative literature review: what factors are associated with vaginal candidiasis in pregnant women?

To locate the relevant studies that answered the research question, descriptors in English were used, as shown in Table 1.

The following descriptors were used: “Pregnant Women”, “Pregnancy”, “Candidiasis”, “Candidiasis, Vulvovaginal”, these being indexed in the Health Sciences Descriptors system (DeCS). The descriptors were combined using the Boolean operator AND and OR.

They were examined using the descriptors in the PubMed database of the National Library of Medicine. The analysis for the selection of studies was carried out according to the inclusion

<table>
<thead>
<tr>
<th>Elements</th>
<th>DECS</th>
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<tbody>
<tr>
<td>P</td>
<td>&quot;Pregnant Women&quot; Pregnancy</td>
</tr>
<tr>
<td>O</td>
<td>Prevalence</td>
</tr>
<tr>
<td>T</td>
<td>Candidiasis &quot;Candidiasis, Vulvovaginal&quot;</td>
</tr>
</tbody>
</table>

Source: DeCS research, 2022.
and exclusion criteria and the second was according to the operation and search strategies of the database.

In PUBMED, 4,352 studies were identified, applying the full text filter available with 819 articles, followed by the last 5 years of publication a total of 191, in Portuguese and English, 189 articles and, research carried out with females with 163 articles, of which the titles and abstracts were analyzed in detail and had as a final result 07 studies and as shown in figure 1. The search period was carried out between the months of November to December 2021.

RESULTS

The articles analyzed used cross-sectional methods. Among the microorganisms identified, Candida albicans was the most prevalent microorganism in all studies, followed by other non-albicans Candida species. From the sample of articles, a total of 2020 pregnant women were obtained, with an average of 288.5 participants per study. (Table 01 and 02).

The data obtained from this study were organized in the form of a table and made it possible to analyze the prevalence, symptoms, complications during pregnancy and risk factors. Table 02 addresses the articles selected to assist in the construction of this study.

Vulvovaginal candidiasis had an average overall prevalence of candidiasis of 51.71% of the cases mentioned in the studies. The clinical diagnosis of candidiasis is made from the symptoms of the pregnant woman, among the clinical manifestations of candidiasis, there is an altered discharge, intense itching, dysuria, irritation or burning and pelvic pain. 3,4,7,8,9,10,11

DISCUSSION

The prevalence of vulvovaginitis among pregnant women is higher,
about 30% when compared to the general public of women. Bacterial vaginosis has a frequency of (30.9%) and trichomoniasis (1.4%). Together, the microbiota comprised a prevalence of 36.4%. 7

Among the vulnerability factors, the low level of education, which is correlated with poor hygiene conditions and low economic level, make pregnant women even more exposed to developing infectious processes caused by candidiasis. Pregnant women with low purchasing power, elementary school and in the third trimester, are more likely to trigger this infection. 5

Another determining factor for clinical worsening during pregnancy was resistance to azole antifungals, the antifungal with the highest resistance rate was fluconazole (48.1%), followed by voriconazole (37%) and nystatin (9.3%). 31 C. albicans species were shown to be susceptible to most of the antifungal agents used, compared to C. krusei, which was the most reported species in the literature with high rates of fluconazole resistance. 9

Although C. albicans is a fungus belonging to the normal vaginal microbiota, this yeast may be associated with the various cases of candidiasis in women, especially when they have some degree of immunosuppression. 11

Candidiasis is frequently identified in pregnant women, constituting one of the main reported gynecological problems. Studies carried out by Bonfanti and Gonçalves 2010, there was a prevalence of 33.75% during the analysis of reports of cytopathological exams of pregnant women in Rio Grande do Sul, Brazil. Lower rates were found in Argentina (28%), Nigeria (25%), 6 in Malaysia (17,20%) 13, and in India (4,13%). 14

The fungal species Candida albicans has a higher prevalence of infection, as they have an estrogen-binding protein in their morphology, which causes a greater interaction between them.

<table>
<thead>
<tr>
<th>Author / year</th>
<th>General Prevalence</th>
<th>Variety Prevalence</th>
<th>Related Symptomatology</th>
<th>Pregnancy complications</th>
<th>Risk factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Konadu, 2019</td>
<td>Symptomatic VVC was 36.5%</td>
<td>-</td>
<td>Abdominal pain (18.92%), Pruritus (23.65%), Bad odor 16.89%, Dysuria 7.43%, Altered discharge (29.05%)</td>
<td>There were no complications associated with Albicans infection.</td>
<td>Multiple partners, Multiparous, Prolonged antibiotic therapy</td>
</tr>
<tr>
<td>Ghaddar, 2019</td>
<td>Symptomatic VVC was detected in 82%</td>
<td>C. glabrata (44.4%), C. albicans (43.4%), C. krusei (12.1%), C. albicans e C. glabrata (2%)</td>
<td>Altered discharge, Itching, bad odor</td>
<td>Abortion</td>
<td>Prolonged antibiotic therapy; Low level of education; Low income</td>
</tr>
<tr>
<td>Mushi, 2019</td>
<td>65.7% of pregnant women</td>
<td>C. albicans 63.4%, C. tropicalis (17.8%), C. glabrata 16.8%, C. krusei (1.5%), Candida parapsilosis (0.5%)</td>
<td>Altered discharge (60.4%), Vaginal itching (51%), Pelvic pain (38%)</td>
<td>-</td>
<td>Low level of education; Low income; Shower practice; Prior antibiotic therapy</td>
</tr>
<tr>
<td>Tsega, 2019</td>
<td>25% were positive for Candida species</td>
<td>Candida albicans (56.25%) followed by C. krusei (21.9%), C. glabrata (17.7%), C. tropicalis (1%), Other / unidentified (3.1%)</td>
<td>Itching (32%), Dyspareunia (12.3%), Altered discharge (40%)</td>
<td>-</td>
<td>HIV; Diabetes; Frequent use of contraceptives; Prolonged use of antibiotics; Number of pregnancies; gestational period.</td>
</tr>
<tr>
<td>Ghaddar, 2020</td>
<td>39% were positive for Candida species</td>
<td>C. albicans was isolated in 42%, C. non-albicans (58%), C. glabrata (71%, N = 41), C. krusei (29%, N = 17)</td>
<td>Discharge changed 34%, Itching 20.5%, Abdominal pelvic pain 5.3%</td>
<td>Premature birth; Induced labor; Recurrent infections in the urinary tract</td>
<td>Low level of education; Low income</td>
</tr>
<tr>
<td>Freitas, 2020</td>
<td>Symptomatic VVC was detected in 62.07%</td>
<td>Candida spp. (31.52%)</td>
<td>Vaginal discharge (44.83%), Genital itching 27.59, Dyspareunia 24.14%</td>
<td>Pelvic discomfort</td>
<td>Diabetes; Immunosuppression; Use of antibiotics</td>
</tr>
</tbody>
</table>

Source: Prepared by the authors, 2021

15 Numerous studies report that C. albicans (80-90%) is the most frequent yeast species identified in cases of vulvovaginal candidiasis. However, in recent years, an increase of 10 to 20% has been observed in the frequency of non-C. albicans species, mainly C. glabrata, C. krusei, C. tropicalis, C. pseudotropicalis, C. parapsilosis, C. lusitaniae and C. guillermondii, indicating a trend of change in the pathological agent of candidiasis. The problem lies in the fact that these other species are more resistant to antifungal agents. 16
Another important finding was the discomfort and complaints caused by the infection, common during the pregnancy period. Among the complaints, women report burning and pain during intercourse, intense odor and/or itching and leucorrhoea. In contrast, vulvovaginal infections are often associated with complications during pregnancy. 37

Other authors bring a wide range of consequences caused by candidiasis, which affects both the physical and psychological aspects of several women annually, and may interfere with affective and sexual relationships, thus, harming the work performance of a significant number of the economically active population, it constitutes an important public health problem in the world. 18

In general, the most frequent clinical features associated with vaginal candidiasis infection were whitish, lumpy discharge, vaginal itching, pain or burning in the pelvic region, and pain during intercourse. 19 From the data obtained from other studies, the significant association of candidiasis with intense vaginal itching among pregnant women is consistent when evaluating vaginal complaints, which suggests a higher probability of intense vaginal itching among patients with candidiasis, followed by whitish discharge. 20

The manifestations frequently identified in candidiasis infections are intense vaginal itching, whitish plaques and whitish discharge with or without a characteristic odor, or without odor, patients report pain during sexual intercourse and in the pelvic region. 21 The diagnosis is based on the clinical picture of the pregnant woman, early and adequate treatment prevents future complications, such as infections of the newborn, premature birth, vulvar discomfort, frequently reported during consultations and may also be related to increased susceptibility to HIV infection. 22

The most important factors that lead to the triggering of candidiasis are: diabetes, diet, carbohydrate and sugar intake, pregnancy, use of antibiotics and corticosteroids, as they degrade the vaginal microbiota and suppress the immune system, multiple sexual partners. Another important factor that increases the risks of pregnant women is the lack of interest and care and interest in seeking medical help. 23

Regarding, it can be a pathology commonly identified in the vaginal microbiota of the female population, it still needs more attention, mainly by the nurse, as a member of the health team and responsible for comprehensive care. During the nursing consultation, the professional must identify all the needs of the pregnant woman, taking a holistic view, acting in the best management of the pathology and in educational interventions, paying attention to the complexity of this infection. 25

CONCLUSION

Candida albicans was the most frequently identified yeast strain, but other species were also described, such as C. krusei, C. glabrata, Candida parapsilosis and C. tropicalis. Candidiasis is not lethal and the diagnosis is clinically presumed, based on the pregnant woman’s symptoms. Among the clinical manifestations of candidiasis, there are altered discharge, intense itching, dysuria, irritation or burning and pelvic pain. In pregnancy, early diagnosis guides efficient treatment, contributes to the improvement of the prognosis of the pregnant woman and will guarantee therapeutic success.

More research on this topic is suggested in order to expand findings. It is necessary to enhance efforts regarding preventive practices and forms of treatment for vulvovaginal infections caused by the genus Candida during the gestational period, minimizing discomforts and complications in pregnant women.
References


