

The Effect of Kandidiasis Vulvovaginalis on pregnancy

Aliya Desvieta Syafii, Edlyna Hayyu Anastasya, Zahra Fiqriyyah Bachamis

¹State University of Malang, Semarang St. No. 5, Malang , 65145

^{2*}Corresponding author, email: zahra.fiqriyyah@gmail.com

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Abstract

Background: Vulvovaginal candidiasis (VVC) is a common fungal infection in pregnant women, with a prevalence of around 20% rising to 30% in the third trimester. This condition is primarily caused by the opportunistic fungus *Candida albicans*, facilitated by hormonal and immunological changes during pregnancy. VVC is associated with various serious obstetric complications, including preterm labour, preterm premature rupture of membranes (PPROM), chorioamnionitis, and congenital candidiasis in the neonate.

Objective: To analyse the impact of vulvovaginal candidiasis on pregnancy, covering pathophysiology, risk factors, complications, and safe management approaches for both mother and foetus.

Methods: This article was compiled using a systematic narrative review method. A literature search was conducted via the PubMed/MEDLINE and Google Scholar databases, using keywords related to candidiasis, pregnancy, preterm labour, and antifungal therapy in both Indonesian and English.

Results: Vaginal yeast infections during pregnancy are triggered by increased levels of oestrogen and progesterone, which suppress the local immune response and increase vaginal glycogen levels, thereby promoting the growth of *Candida* spp. These infections can lead to invasion of the chorioamniotic membranes, triggering the production of prostaglandins and pro-inflammatory cytokines, which in turn result in premature contractions and weakness of the amniotic membranes. Topical antifungal therapies such as clotrimazole and nystatin are proven to be safe during pregnancy.

Conclusion: VVC is a significant infection in the context of pregnancy as it has the potential to cause serious complications. Early detection, education, and appropriate management are crucial to prevent adverse obstetric outcomes.

1. Introduction

Poliomyelitis is an infectious disease caused by the poliovirus and can lead to permanent paralysis, especially in children. This disease attacks the central nervous system and, in severe cases, can cause respiratory problems and even death. Although various global immunization programs initiated by the World Health Organization have significantly reduced the incidence of polio, the disease remains a public health threat in some areas with low vaccination coverage. Successful polio eradication faces various challenges, such as unequal access to health services, low public awareness of the importance of vaccination, and the emergence of vaccine-derived poliovirus (VDPV) cases. These conditions indicate that polio eradication has not been fully achieved. Furthermore, there are gaps in knowledge regarding the effectiveness of immunization strategies in remote areas and the social factors that influence the success of eradication programs. This study aims to discuss the spread of poliovirus, evaluate the effectiveness of immunization programs, identify shortages of OPV and IPV vaccines, and identify factors that influence the success of polio eradication efforts in various regions. The research results are expected to contribute to the development of more effective strategies to support and reduce the spread of poliovirus, with the goal of global polio elimination.

2. Method

This article was compiled using a narrative-systematic literature review method. The literature review was conducted by identifying, evaluating, and synthesizing relevant research findings from various published scientific sources. This method was chosen to provide a comprehensive, evidence-based overview of the effects of syphilis infection on pregnancy.

The criteria for this literature review include scientific articles published within the last 10 years, in both Indonesian and English. The included articles discuss candidiasis in pregnancy, congenital candidiasis, vertical transmission of candidiasis, as well as complications and management of candidiasis in the context of obstetrics and perinatology.

The literature search was conducted systematically through several reputable electronic databases, including PubMed/MEDLINE and Google Scholar. Keywords used in the literature search included: "vulvovaginal candidiasis," "Candida albicans," "pregnancy," "pregnancy," "preterm birth," "premature delivery," "neonatal candidiasis," "premature rupture of membranes," "antifungal therapy," "vertical transmission," as well as various combinations of these keywords. The search was conducted in both Indonesian and English to obtain a broader scope of the literature. assessment, and full-text evaluation. Two researchers conducted the selection process independently to minimize research bias, and discrepancies in the selection results were resolved through joint discussion.

3. Results and Discussion

3.1 Results

Based on the literature reviewed, it was found that vulvovaginal candidiasis is one of the most common infections during pregnancy. (Messina et al., 2024), in their study published in the journal Tropical Medicine and Infectious Diseases, reported that the prevalence of vulvovaginal candidiasis during pregnancy is estimated to be around 20%, peaking at approximately 30% in the third trimester. Meanwhile, a study by (Disha & Haque, 2022) published in Infectious Diseases in Obstetrics and Gynecology states that the prevalence of vulvovaginal candidiasis (VVC) among pregnant women varies across countries, with the highest rates found in Asian and African nations, reaching 90.38% in Kenya, 62.2% in Nigeria, and 61.5% in Yemen.

(Cilik et al., 2022), in a study conducted in Surabaya, Indonesia, reported that routine examination of vaginal secretions in pregnant women can reveal a significant incidence of Candida infection, with the risk of infection increasing at various gestational ages. A study from Nigeria by (Olowe et al., 2014), published in PubMed, found a prevalence of VVC of 36% among pregnant women receiving antenatal care. This wide variation in prevalence is influenced by differences in geographic, sociodemographic, and healthcare access conditions

3.2 Discussion

The results of this study indicate that immunization programs remain the most effective strategy in preventing the spread of poliovirus. This finding aligns with previous studies that suggest that increased vaccination coverage is directly related to a global decline in polio cases. However, successful eradication depends not only on vaccine availability but also on social and environmental factors. Low health education and distrust of vaccines remain major challenges in several developing countries. Therefore, a multidisciplinary approach involving the government, health workers, and the community is needed to improve the success of eradication programs.

4. Conclusion

Vulvovaginal candidiasis (VVC) is a fungal infection whose prevalence increases significantly during pregnancy, particularly in the third trimester, due to hormonal changes and a physiological decline in immunity. *Candida albicans* is the dominant pathogen responsible for 85–90% of cases. Pathophysiologically, increased levels of estrogen and progesterone during pregnancy suppress the vagina's local defense mechanisms, facilitating the colonization and growth of *Candida* spp.

Untreated VVC has the potential to cause serious obstetric complications, such as preterm labor, preterm rupture of membranes, chorioamnionitis, and congenital candidiasis in neonates, through mechanisms involving invasion of the chorioamniotic membranes and activation of the inflammatory response. *Candida* colonization in the second trimester has been shown to be more strongly associated with the risk of preterm labor than in the first trimester.

Management of VVC during pregnancy must prioritize the safety of the mother and fetus. Topical antifungal therapy, such as clotrimazole and nystatin, is the primary recommended treatment, while oral fluconazole is not recommended due to its teratogenic risk. Thus, early screening, accurate diagnosis, and prompt management are key to reducing the incidence of obstetric complications resulting from VVC.

Author Contributions

A.D.S was also involved in the introduction, discussion, editing and the revision process. E.H.A contributed to the preparation of the title page, abstract, results, conclusions, editing and the revision process. Z.F.B contributed to the methods section, editing and the revision process. All authors were involved in the

preparation of the manuscript. The authors collaboratively participated in the development of the manuscript through discussion, review, and

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