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Prevalence and Risk Factors of High-risk Human Papillomavirus Infection in HIV-positive Women with Clinical Tuberculosis Symptoms in a Middle-income Country

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Introduction

Human Papillomavirus infection is one of the most common sexually transmitted infections globally. The virus is responsible for several health conditions, including genital warts, cervical cancer, and other anogenital cancers. High-risk HPV types, specifically types 16 and 18, are strongly associated with the development of cervical cancer and other cancers of the anogenital region. While HPV infections are prevalent worldwide, certain populations, such as HIV-positive individuals, are at a significantly higher risk of developing persistent infections with high-risk HPV types, which may lead to the development of cervical and other cancers. In sub-Saharan Africa and other parts of the world, tuberculosis remains a major health concern. Tuberculosis, caused by Mycobacterium tuberculosis, primarily affects the lungs but can spread to other organs and systems, including the genitals. HIV infection significantly increases the susceptibility to tuberculosis and accelerates the progression of TB due to immunosuppression. A growing body of evidence suggests that HIV-positive individuals are more likely to have persistent HR-HPV infections, which increase their risk of HPV-related malignancies. Moreover, both HIV and tuberculosis share common risk factors, such as immunosuppression, poverty, and poor access to healthcare [1,2].

Description

Among these, HPV types 16 and 18 are responsible for approximately 70% of cervical cancers worldwide. In HIV-positive women, the immune system's inability to control HPV infection can lead to persistent infections, which significantly increase the risk of developing HPV-related malignancies. Studies have shown that HIV-positive individuals are more likely to have higher rates of HPV persistence and progression to high-grade cervical intraepithelial neoplasia and cervical cancer compared to HIV-negative individuals. This is attributed to the immunosuppressive effects of HIV, which impair the body's ability to mount an effective immune response against HPV. Women with HIV are particularly vulnerable to persistent infections, and the rates of HPV-associated cancers, including cervical cancer, are disproportionately high among them. These women are also at an increased risk of co-infections, including tuberculosis, which can exacerbate their immunocompromised state [3-5].

Conclusion

The intersection of high-risk HPV infection, HIV, and tuberculosis in women in middle-income countries presents a significant public health challenge. HIV-positive women with clinical tuberculosis symptoms are particularly vulnerable to persistent HPV infections, which increase the risk of HPV-related cancers. The combined immunosuppressive effects of HIV and TB create a high-risk environment for HPV persistence and progression. Addressing the prevalence and risk factors of HR-HPV infection in these women requires a multi-faceted approach that includes enhanced access to healthcare, improved HIV management through ART, screening for HPV and cervical cancer, and increased awareness about the importance of vaccination and preventive measures. To reduce the burden of these diseases in middle-income countries, it is essential to implement integrated strategies that target both TB and HIV while addressing the heightened risk of HPV-related malignancies in HIV-positive women with TB. This approach could significantly improve outcomes and reduce the morbidity and mortality associated with these diseases in vulnerable populations.

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Conflict of Interest

None.

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