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TRANSMISSION OF HUMAN IMMUNODEFICIENCY VIRUS (HIV) FROM MOTHER TO FETUS WITH IMPLICATIONS IN ORAL PATHOLOGY

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Abstract.

Mother-to-child transmission of HIV is known as vertical transmission of human immunodeficiency virus (HIV). Although the risk of transmission can be significantly reduced with preventive measures, there is still a possibility of mother-to-child transmission of HIV without appropriate interventions. The virus can be present in bodily fluids such as blood and breast milk, and coming into direct contact with these fluids can lead to infection. Children born to HIV-infected mothers must receive appropriate medical and dental care from an early age to manage potential complications associated with vertical transmission of the virus. Oropharyngeal candidiasis in HIV-infected children has an increased risk of developing fungal infections, such as oropharyngeal candidiasis. This infection can affect the oral cavity, throat, and esophagus, causing symptoms such as white or red lesions, difficulty swallowing, and pain in the mouth. The compromised immune system of HIV-infected children puts them at increased risk of bacterial infections in the oral cavity. These infections can include gingivitis, periodontitis, and other bacterial pathogens that can affect oral tissues. Oral ulcerative lesions in the oral cavity in children with HIV can develop ulcerative lesions in the oral cavity, which can cause pain and discomfort. These lesions can be caused by opportunistic infections or manifestations of the virus itself. HIV can also affect tooth development in children, causing delays or abnormalities in their growth and development. The gums can also be affected, leading to gingivitis or other gum disease..

Keywords*:* HIV, labor/birth, TAR (antiretroviral therapy), oral pathology

Introduction

Mother-to-child transmission of HIV is known as vertical transmission of human immunodeficiency virus (HIV). Although the risk of transmission can be significantly reduced with preventive measures, there is still a possibility of mother-to-child transmission of HIV without appropriate interventions [1-3].

Mother-to-child transmission of HIV, also known as vertical transmission of the virus, can have serious implications for oral pathology in children. This transmission can occur during pregnancy, childbirth, or breastfeeding [1-3].

The relative contribution of each pathway to MTCT may vary depending on several factors, such as maternal viral load, duration of breastfeeding, and use of antiretroviral therapy (ART) [3].

The vertical transmission of human immunodeficiency virus (HIV) from mother to fetus is a major reproductive health concern. Although the risk of transmission can be significantly reduced, preventive interventions and measures remain essential in ensuring the health of both mother and child [4-6].

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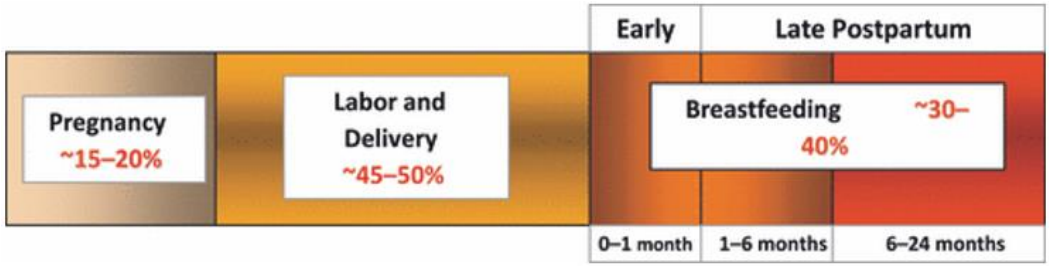

Fig. 1. Mother-to-child transmission (MTCT) of HIV-1 can occur during pregnancy, labor, and delivery or breastfeeding.

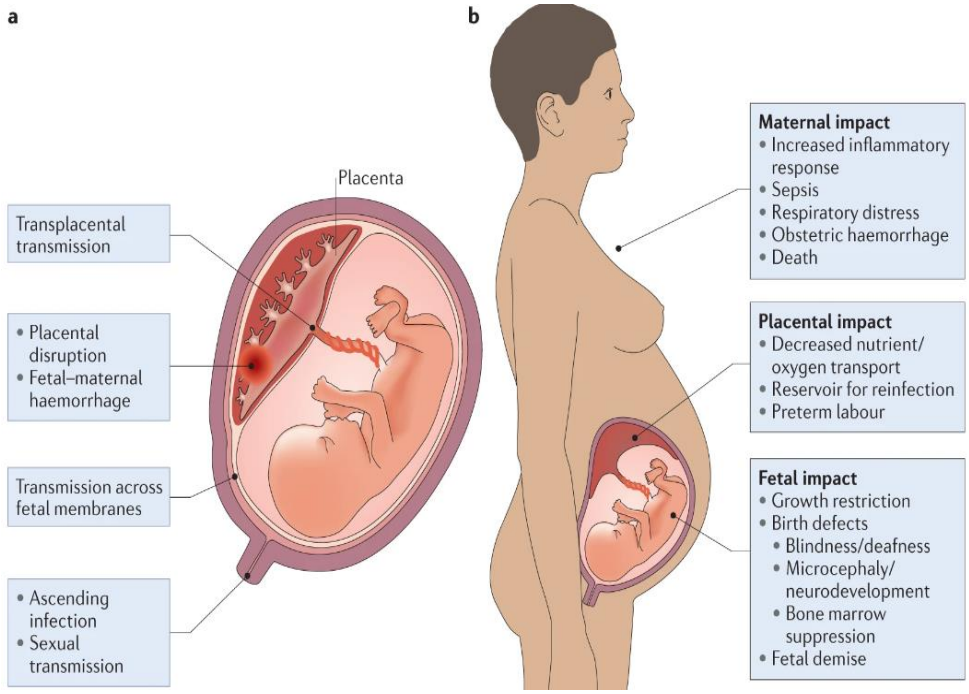

Fig. 2. The transmission and the impact

Did you know that TORCH pathogens, which stand for Toxoplasma gondii, other, rubella virus, cytomegalovirus, and herpes simplex virus, can enter the intra-amniotic compartment through various means, these include direct transplacental transmission, placental damage or disruption, fetal-maternal hemorrhage, and even by ascending the genital tract.

It's important to note that infections during pregnancy can have different effects on the maternal host, fetus, and the placenta itself. The outcome of the infection and the ensuing inflammatory response can have significant consequences at each site [5].

HIV transmission can occur during labor and delivery. It is therefore important that HIV-positive women are under the close supervision of qualified medical personnel during these critical times**.** The main time of risk is during labor and delivery, but breastfeeding can also contribute to transmission. The virus can be present in bodily fluids such as blood and breast milk, and coming into direct contact with these fluids can lead to infection [6-8].

HIV can pass from mother to fetus during pregnancy, especially in the last trimester, when levels of the virus in the blood may be higher. Transmission can occur by passing the

virus from the mother's blood to fetal blood through the placenta, which is responsible for exchanging substances between mother and fetus [3-6].

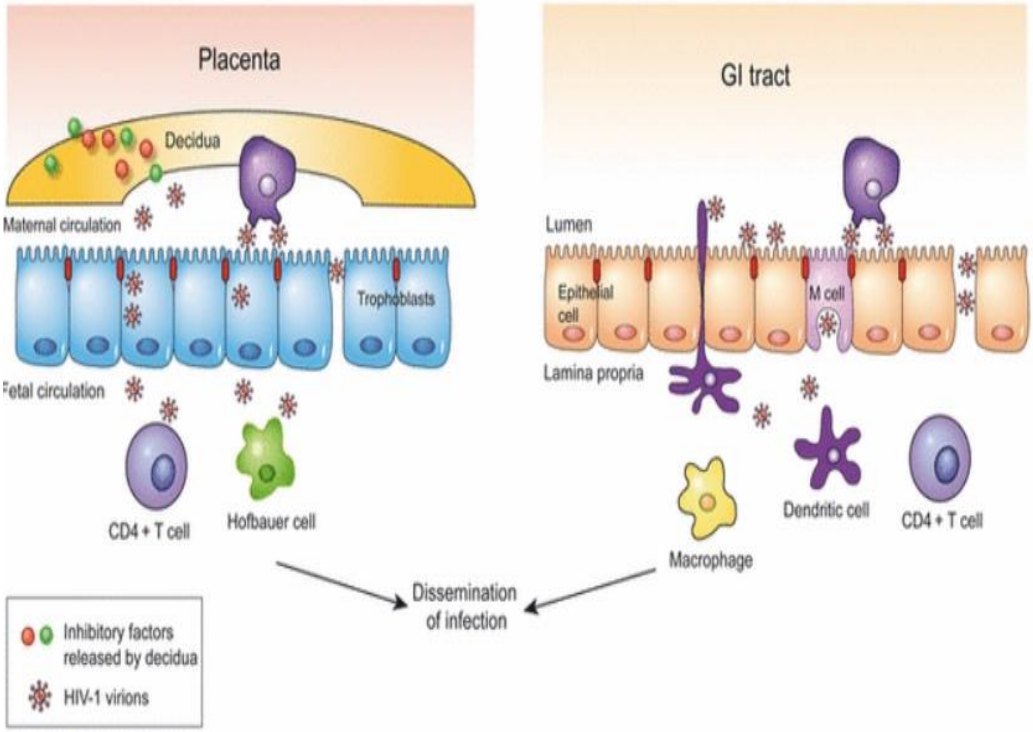

Fig. 3. Transmission mechanism from mother to the fetus

It seems that viral transmission from the mother to the fetus/child can occur through various mechanisms. These mechanisms may include breaches in the tissue of both the placenta and the gastrointestinal tract, direct infection of cells, or transcytosis of cell-associated viruses. In the placenta, a balance of cytokines and chemokines may play a role in directing the infection of trophoblastic cells. On the other hand, in the gastrointestinal tract, M cells in the Peyer's plaques of the digestive epithelium could potentially be involved in delivering samples of foreign material directly to the close intraepithelial lymphoid cells. Additionally, dendritic cells (DCs) might also play a part in transporting the virus from the intestinal lumen by penetrating through tight junctions of the intestinal enterocytes [3].

The virus can be transmitted through breast milk. Therefore, the general recommendation is that HIV-infected women avoid natural breastfeeding and opt for formula feeding. In cases where access to alternative foods is limited, specific measures may be taken to minimize the risk of transmission [8-12].

Prevention of HIV transmission to the fetus

TAR (antiretroviral therapy), correct and consistent administration of antiretroviral drugs (ARVs) during pregnancy, as well as continued treatment during labor and delivery, can significantly reduce the risk of vertical transmission [12-15].

TAR can also improve the overall health of HIV-positive mothers, regular and correct administration of antiretroviral drugs during pregnancy is essential. TAR not only improves the

health of the mother but also significantly reduces the risk of HIV transmission to the fetus [13-15].

Access to adequate and regular prenatal care plays a crucial role in monitoring the health of the mother and fetus. Regular tests and adjustments in treatment can be implemented to minimize risk [10-13].

Early HIV testing is essential to start treatment immediately. Comprehensive counseling of HIV-positive patients ensures a clear understanding of the risks and preventive measures available [6-9].

Adequate prenatal care and careful monitoring of maternal and fetal health can help manage the risk of HIV transmission. Early and regular prenatal care provides an opportunity to adapt your treatment plan and take preventive measures [12-15].

Implications of HIV in oral pathology of children:

Oropharyngeal candidiasis in HIV-infected children has an increased risk of developing fungal infections, such as oropharyngeal candidiasis. This infection can affect the oral cavity, throat, and esophagus, causing symptoms such as white or red lesions, difficulty swallowing, and pain in the mouth [16-18].

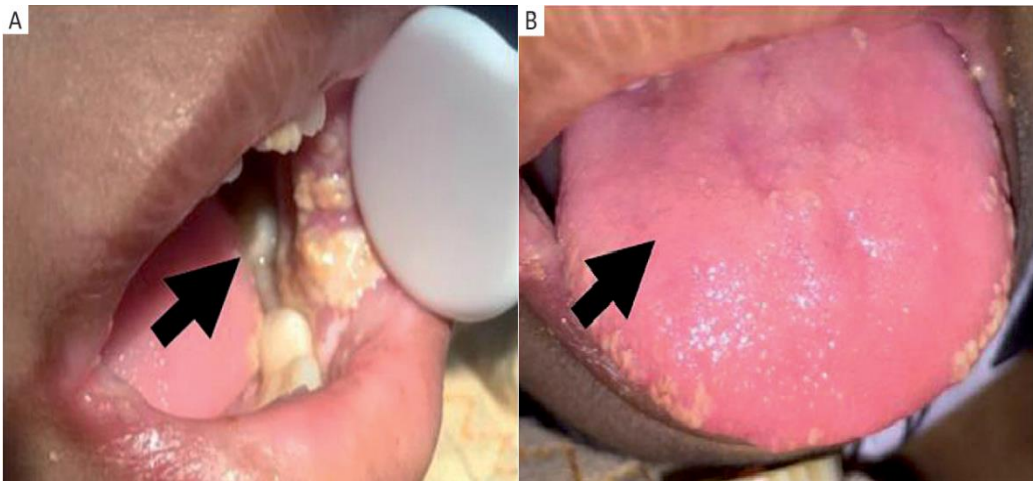

Fig. 4. Oral candidiasis in children infected with HIV/AIDS A) Pseudomembranous candidiasis of the oral mucosa. B) Erythematous candidiasis in the dorsal parts of the tongue. [18]

The compromised immune system of HIV-infected children puts them at increased risk of bacterial infections in the oral cavity. These infections can include gingivitis, periodontitis, and other bacterial pathogens that can affect oral tissues [18-20].

Oral ulcerative lesions in the oral cavity in children with HIV can develop ulcerative lesions in the oral cavity, which can cause pain and discomfort. These lesions can be caused by opportunistic infections or manifestations of the virus itself [19-21].

HIV can also affect tooth development in children, causing delays or abnormalities in their growth and development. The gums can also be affected, leading to gingivitis or other gum disease [16-19].

Children with HIV require special attention in terms of oral care and dental treatment. Some dental treatments or procedures may require adjustments to account for their immunological status and minimize the risk of complications [18-21].

Conclusions

It is important to emphasize that research and medical recommendations are constantly evolving, and treatment protocols and preventive measures may undergo changes depending on new scientific findings, vertical transmission of human immunodeficiency virus (HIV) from mother to fetus is a major concern in reproductive health. Although the risk of transmission can be significantly reduced, preventive interventions and measures remain essential in ensuring the health of both mother and child.

The main time of risk is during labor and delivery, but breastfeeding can also contribute to transmission. The virus can be present in bodily fluids such as blood and breast milk, and coming into direct contact with these fluids can lead to infection, children born to HIV-infected mothers must receive appropriate medical and dental care from an early age to manage potential complications associated with vertical transmission of the virus.

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