Revista Eletrônica
Acervo Saúde
Electronic Journal Collection Health ISSN 2178-2091

Newborn of a mother coinfected with HIV and *Treponema pallidum*

Recém-nascido de mãe coinfectada com HIV e *Treponema pallidum*

Recién nacido de madre coinfectada con VIH y *Treponema pallidum*

Mayara Carolina Cañedo[1,3], Ana Paula de Lima Trein[2], Cristiane de Sá Dan[2,3], Marília Maria Alves Gomes[2], Carolina Letícia Faria Silva[4], Miguel Augusto Machado de Araújo[2], Vinícius João Navarini[2], Stephany Anastacia Serpa Alarcón[5], Simone Simionatto[3].

ABSTRACT

Objective: This case report details a newborn delivered to a mother coinfected with human immunodeficiency virus (HIV) and *Treponema pallidum*, highlighting the associated complications and clinical outcomes. **Case details:** The case was documented in February 2023 at a teaching hospital in Brazil's Central-West region. Data were collected through interviews and a comprehensive review of medical records. The mother, a 19-year-old single parent, had a history of using both legal and illicit drugs. She received both low- and high-risk prenatal care. During her pregnancy, she was diagnosed with HIV and syphilis and subsequently treated with three doses of benzathine penicillin and antiretroviral therapy. The newborn was diagnosed with Dandy-Walker Malformation, although this diagnosis was not confirmed at birth. The child was delivered via cesarean section at 37 weeks of gestation, with a low birth weight of 1,974 grams. Upon delivery, the newborn exhibited altered hearing screening results bilaterally. Screening for HIV and syphilis was conducted, and zidovudine was prescribed at a dosage of 4 mg/kg every 12 hours for 28 days. **Final considerations:** This case underscores the critical importance of early and comprehensive prenatal care, alongside timely diagnosis and treatment of HIV and syphilis, to optimize outcomes for both mothers and their infants.

Keywords: Sexually transmitted diseases, Congenital abnormalities, Maternal-child health services, Prenatal care.

RESUMO

Objetivo: Relatar o caso de um recém-nascido de mãe coinfectada pelo vírus da imunodeficiência humana (HIV) e *Treponema pallidum*, bem como as complicações e desfecho clínico. **Detalhamento do caso:** O caso relatado ocorreu em fevereiro de 2023, em um hospital de ensino da região Centro-oeste do Brasil. O caso foi estudado por meio da realização de entrevistas e revisão de todos os registros médicos. A mãe do recém-nascido era solteira, tinha 19 anos e fazia uso de drogas lícitas e ilícitas. Ela foi acompanhada com pré-natal de baixo e alto risco. Durante a gestação foi diagnóstica como portadora do HIV e com sífilis, sendo que recebeu três doses de penicilina benzatina e terapia antirretroviral. A criança teve um diagnóstico

[1] Universidade Estadual de Mato Grosso do Sul (UEMS), Campo Grande - MS.
[2] Hospital Universitário da Universidade Federal da Grande Dourados (HU-UFGD), Dourados – MS.
[3] Universidade Federal da Grande Dourados (UFGD), Dourados – MS.
[4] Secretaria municipal de saúde de Campo Grande (SESAU), Campo Grande – MS.
[5] Secretaria municipal de saúde de Dourados (SEMS), Dourados – MS.

SUBMETIDO EM: 10/2024 | ACEITO EM: 11/2024 | PUBLICADO EM: 3/2025

obstétrico de Malformação de Dandy-Walker que não se confirmou ao nascimento. O recém-nascido nasceu com 37 semanas de gestação por cesariana com baixo peso (1.974 gramas). Ao nascer apresentou triagem auditiva alterada bilateralmente. Realizada triagem para HIV e sífilis.Prescrita zidovudina na dose de 4mg/kg/dose a cada 12 horas durante 28 dias, **Considerações finais:** O relato de caso reforça a importância do pré-natal precoce e de qualidade, bem como do diagnóstico e tratamento precoce do HIV e da sífilis.

Palavras-chave: Infecções sexualmente transmissíveis, Anormalidades congênitas, Serviços de saúde materno-infantil, Cuidado pré-natal.

RESUMEN

Objetivo: Reportar el caso de un recién nacido de madre coinfectada con el virus de la inmunodeficiencia humana (VIH) y *Treponema pallidum*, así como las complicaciones y evolución clínica. **Detalles del caso:** El caso notificado ocurrió en febrero de 2023, en un hospital universitario de la región Centro-Oeste de Brasil. El caso fue estudiado mediante la realización de entrevistas y la revisión de todas las historias clínicas. La madre del recién nacido era soltera, tenía 19 años y consumía drogas legales e ilegales. Fue seguida con atención prenatal de bajo y alto riesgo. Durante el embarazo fue diagnosticada como portadora del VIH y con sífilis, y recibió tres dosis de penicilina benzatínica y terapia antirretroviral. La niña tenía un diagnóstico obstétrico de Malformación de Dandy-Walker que no fue confirmado al nacer. La recién nacida nació a las 37 semanas de gestación por cesárea con bajo peso (1.974 gramos). Al nacer presentó cribado de audición alterada bilateralmente. Se realizaron pruebas de detección de VIH y sífilis. Se prescribe zidovudina a dosis de 4 mg/kg/dosis cada 12 horas durante 28 días. **Consideraciones finales:** El reporte de caso refuerza la importancia de una atención prenatal temprana y de calidad, así como el diagnóstico y tratamiento temprano del VIH y la sífilis.

Palabras clave: Enfermedades de transmisión sexual, Anomalías congénitas, Servicios de salud materno-infantil, Atención prenatal.

INTRODUCTION

The human immunodeficiency virus (HIV) continues to pose a significant global health challenge, with infection rates remaining alarmingly high in several regions (UNAIDS, 2024). From 2000 to June 2023, Brazil reported 158,429 cases of HIV among pregnant, parturient, and puerperal women, with 7,943 notifications in 2022 alone, reflecting a detection rate of 3.1 cases per 1,000 live births (LB). Notably, the detection rates among these populations have stabilized since 2018; however, a 3.9% increase in the HIV detection rate among pregnant women was observed between 2020 and 2022 (BRASIL, 2023).

In 2013, Brazil was the country in Latin America and the Caribbean with the highest number of HIV-infected children (20,000 infected children under the age of 15) (SOHN AH and HAZRA R, 2013). In addition, the average rate of adherence of pregnant women to antiretroviral therapy (ART) during prenatal care in Brazil between 2010 and 2017 was 68.8%, which is considerably low (TRINDADE LNM et al., 2021). Furthermore, it is possible to state that the use of antiretroviral drugs during childbirth changed after the COVID-19 pandemic, with pregnant women being 1.82 times more likely not to use drug therapy during childbirth (LOPES BB et al., 2023).

HIV co-infection with the bacterium *T. pallidum*, which causes syphilis, another sexually transmitted infection (STI), could increase the HIV viral load and lead to a decrease in the number of LT-CD4+ cells. In addition, HIV alters the course of syphilis, thereby facilitating the development of neurosyphilis, the most severe form of the disease (VASCONCELOS MSB et al., 2021).

From 2012 to 2022, 1,237,027 cases of acquired syphilis, 537,401 cases of syphilis in pregnant women, 238,387 cases of congenital syphilis and 2,153 deaths from congenital syphilis were reported in Brazil (BRASIL, 2023). The detection rate of syphilis in pregnant women has increased over the entire time series. In 2022, the rate was 32.4 cases per 1,000 LB, which represents an increase of 15.5% compared to 2021.

The percentage of adequately prescribed treatment for syphilis in pregnant women was 82.6% in 2022, an increase of 11.8% on the previous year. However, in order to eliminate congenital syphilis, it is necessary to achieve adequate maternal treatment coverage of 95% or more (BRASIL, 2023).

The average age of women diagnosed with syphilis was 23 years, and 49.2% of these women identified themselves as brown, while 18.3% reported having only completed high school. In addition, more than a third (39.6%) of reported cases had non-treponemal titers <1:8, while 87.5% received first-line treatment with penicillin (CAMBOU MC et al., 2021).

Consequences of maternal *T. pallidum* exposure can include low birth weight, premature birth, and increased need for neonatal hospitalization (ROCHA AFB et al., 2021). Additionally, fetal malformations have been associated with antiretroviral use during pregnancy in HIV-positive women (URBAN MF, CHERSICH MF, 2007; LOPES MAB et al., 2007). However, there is a scarcity of studies addressing the outcomes of co-infection with HIV and syphilis among pregnant women and their newborns in Brazil. This report presents the case of a newborn delivered to a mother co-infected with HIV and *T. pallidum*, detailing the associated clinical complications and outcomes.

DETAILS OF THE CASE

This study was conceived as a descriptive case report characterized by an organized chronological sequence and sufficient detail to interpret the case correctly. The study was carried out with a puerperal woman co-infected with HIV and *T. pallidum* and her newborn. It was carried out in February 2024 in the rooming-in unit of a teaching hospital in the Midwest region of Brazil. Data was collected through interviews, a questionnaire with semi-structured questions, and analysis of medical records.

The interviews to collect information were carried out in the hospital during hospitalization, using a questionnaire about the patient's sociodemographic characteristics, obstetric history, and partner's treatment. Medical records were also reviewed to obtain data on the results of rapid tests on admission to the obstetric center; serologies carried out during hospitalization, and blood and cerebrospinal fluid tests. In addition, data was collected on possible complications in the newborn and whether they required hospitalization and/or neonatal resuscitation at birth. Apgar, gender, and anthropometric data were collected, as well as information on changes in the newborn's long-bone X-ray and the need for treatment. In addition, a medical record review was carried out in March 2024 to see how the child's first year of life had been.

HIV infection was first detected by the HIV 1/2 Rapid Test (Bioclin HIV TRI LINE) and then confirmed by Bio-Manguinhos HIV 1 and 2. For HIV 1 viral load, Real-time PCR/Cepheid Xpert flow cytometry/BD (MULTITEST/FACSVIA). *T. pallidum* infection was detected by non-treponemal tests at the Venereal Disease Research Laboratory (VDRL) (Wiener) and the treponemalimmunochromatographic test (Bioclin).

The procedure for this study was approved by the Human Research Ethics Committee (opinion no. 5.588.205 and CAAE 60270922.8.0000.5160). The participant carefully read and signed the Informed Consent Form to participate in the study. The participant's anonymity was guaranteed by Resolutions 466/2012-510/2016-580/2018 of the Brazilian Ministry of Health.

History of the puerperal woman

The puerperal woman was 19 years old, brown, single, a smoker (five cigarettes a day), an alcoholic, and a marijuana user. She had an incomplete primary education and an income below the Brazilian minimum wage in 2024. The participant reported having professional and homemade tattoos. She had her first sexual intercourse at the age of 14 and had had five sexual partners in the last two years. The case in question was her first pregnancy, and she denied any miscarriage.

According to her last menstrual period (LMP), she started prenatal care at seven weeks and four days gestation and was pregnant with an initial weight of 54 kg, a height of 1.64, and a Body Mass Index (BMI) of 19.93. At her last appointment, she weighed 60 kg. Her fasting blood glucose was 98 mg/dL, and she had received dietary advice due to gestational diabetes. According to another record in the pregnant woman's

chart, her blood glucose was 70 mg/dL two months after the previous visit. Her blood pressure was 90 × 60 mmHg at her first appointment and remained unchanged throughout her pregnancy.

She had her first ultrasound at eight weeks and three days. This ultrasound showed a single embryo with a fetal heartbeat of 148 bpm. She had her subsequent ultrasound sessions at 12 weeks, 13 weeks, and one day and 19 weeks.

At the beginning of prenatal care, she learned of HIV and *T. pallidum* co-infection through rapid tests. As a result, she was referred to the high-risk pregnancy clinic and the specialized service for people with HIV. She had more than six consultations with the medical and nursing team during prenatal care. **Framework 1** lists the tests carried out on the patient. **Framework 2** lists the medications and immunizations prescribed during prenatal care.

Framework 1 - STI assay during prenatal, delivery, and postpartum periods of pregnancy.

Date	Testsperformed	Results
07.28.2022	Syphilisrapidtest	Respondent
07.28.2022	HIV Quicktest	Respondent
s08.04.2022	Anti-HIV antibodies (virus 1 and 2). Fourthgenerationimmunoassaytest	18.28
08.04.2022	Anti-HIV antibodies (virus 1 and 2). Enzyme-linkedimmunosorbentassay	1.47
08.04.2022	VDRL	1:32
08.04.2022	Treponemaltest	94.89
08.15.2022	Viral load	113 copies/ml
08.15.2022	CD4	566 cell/ml
09.06.2022	VDRL	1:8
10.31.2022	VDRL	1:4
11.09.2022	Viral load	53 copies/ml
11.09.2022	CD4	563 cell/ml
01.16.2022	Viral load	Undetectable
02.02.2023	Anti-HIV antibodies (virus 1 and 2) Fourth-generation immunoassay	30.40
02.02.2023	Enzyme immunoassay anti-HIV antibodies (virus 1 and 2)	7.88
02.24.2023	VDRL	1:8
02.24.2023	Quicktest	Respondent

Source: Cañedo MC, et al., 2025.

Framework 2 - Medications and immunizations are administered during the pregnant woman's prenatal care, delivery, and puerperium.

Date	Medications/Immunizations	Method of administration
07.28.2022	Penicillin G benzathine 2.4 million IU	Intramuscular
09.28.2022	Folicacid	Orally
09.28.2022	Ferroussulphate	Orally
O7.29.2022	TARV - Tenofovir 300mg (TDF) / Lamivudina 300mg (3TC) "2 and 1" + Dolutegravir 50mg (DTG).	Orally
08.04.2022	Penicillin G benzathine 2.4 million IU	Intramuscular
08.11.2022	Penicillin G benzathine 2.4 million IU	Intramuscular
10.26.2022	Hepatitis B vaccine	Intramuscular
10.26.2022	dTpavaccine	Intramuscular
02.24.2023	Oral contraceptivewithprogesterone	Orally
02.24.2023	Cabergoline	Orally
02.24.2023	Analgesics	Orally
02.24.2023	Ferroussulphate	Orally

Source: Cañedo MC, et al., 2025.

In February 2023, one day before the birth of her newborn, the pregnant woman went to hospital to have her left Bartholin's gland drained. Antibiotics were prescribed (ceftriaxone 500 mg and azithromycin 1 g). On the same day, a new obstetric ultrasound was carried out because of suspected intrauterine growth restriction. The obstetric ultrasound confirmed the suspicion, and the fetus showed growth restriction (P < 3), with apparent communication between the cisterna magna and the fourth ventricle (Dandy-Walker variant). The uterine height was 27 cm, the fetal heart rate was 150 bpm, and the BP was 100 × 60 mmHg. A cesarean section was therefore scheduled for the following day, and the pregnant woman was instructed to arrive fast.

When she was admitted to the obstetric center, she presented the results of the last tests carried out, according to which the VDRL titer was 1:8, the treponemal test result was 102.86, and the rapid test was reactive for HIV. According to the medical records, she had an undetectable viral load. The mother received antiretroviral therapy (ART) consisting of Tenofovir 300 mg (TDF) + Lamivudine 300 mg (3TC) + Dolutegravir 50 mg (DTG). In addition, cabergoline was prescribed during hospitalization due to contraindications for breastfeeding, as well as ferrous sulfate (200 mg) and oral contraceptives. Benzathine penicillin (vial) was applied at a dose of 1,200,000 IU to each buttock due to increased VDRL titers.

History of the newborn

The baby was delivered by cesarean section at 37 weeks gestation. The newborn was male, weighing 1,974 g, with a length of 44 cm, HC of 32 cm, TC of 28 cm, and BP of 24.5 cm. As such, the newborn was considered low birth weight, small for gestational age, and had an Apgar score of 9/10. The cord was clamped immediately without the need for airway aspiration or neonatal resuscitation. The newborn was bathed in running water and placed in a cradle with radiant heat. Vitamin K and the hepatitis B vaccine were administered to the newborn. The BCG vaccine was not administered due to the newborn's low weight.

A rapid test was carried out on the newborn, which revealed that the child was reactive to HIV. Zidovudine at a dose of 4 mg/kg/dose was prescribed for administration every 12 hours for 28 days, with the first dose administered four hours after birth. The other laboratory tests carried out on the newborn revealed red blood cells 5.41 mm3, hemoglobin 18.60 g/dL, hematocrit 55.10%, MCV 101.84 fL, MCHC 34.38 pg, MCHC 33.75 g/dL, RDW 15.20%, erythroblasts 2.1, leukocytes 9. 670/mm3, neutrophils 49.1%, eosinophils 2.7%, basophils 1.1%, lymphocytes 30.7%, monocytes 12.2%, platelets 159,000, CRP 10.7, total bilirubin 9.02, direct bilirubin 0.32, indirect bilirubin 8.78, reticulocytes 2.52%, RE Reticulocytes T-He 34.3/pg and VDRL 1:4. The newborn's HIV viral load was not determined during hospitalization.

According to obstetric ultrasound observations, the newborn had been diagnosed with Dandy-Walker Malformation. Therefore, after birth, a transfontanelle ultrasound was performed, based on which the malformation was ruled out, as the imaging test revealed no such alterations. The little heart, eye, and tongue tests were also taken, revealing no alterations in the results. The hearing screening revealed bilateral altered results. As for the heel prick test, he was referred to the primary health unit after discharge.

On discharge, the newborn weighed 1,900 g, had a respiratory rate of 42 bpm and a heart rate of 136 bpm, was in good general condition, hydrated, flushed, afebrile-cyanotic, anicteric, and had a normotensive fontanelle. Cardiac auscultation revealed normorhythmic sounds, normal phonation in two clicks, and no murmur. Pulmonary auscultation revealed symmetrical vesicular murmurs and no adventitious sounds. The newborn was given infant formula by bottle. The newborn was then referred to the outpatient clinic of a specialized HIV service for follow-up. Vitamin D 200 IU was prescribed at a dose of two drops daily from the seventh day of life until the child was one year old.

The result of the heel prick test was: biotinidase activity (enzyme deficiency) 103 IU; IRT (immunoreactive trypsin) (cystic fibrosis) 7.40ng/ml; PKU (phenylketonuria) (aminoacidopathies) 0.90 mg/dL; 17 OH progesterone (congenital adrenal hyperplasia) 2.10ng/Ml; anti-Toxoplasma gondii IGM (congenital toxoplasmosis) non-reactive; TSH - thyrotropin (congenital hypothyroidism) 0.80 uU/Ml and hemoglobin variants (hemoglobinopathies) usual standard. The viral load was undetectable during the follow-up on the 14th day of life. The same happened with the viral load at one month and 18 days. The infant presented with

bronchiolitis two months and 25 days after birth, and on this date, the VDRL was non-reactive. After 18 months of follow-up, discharge from follow-up was scheduled for August 2024. Interestingly, no research reports into Dandy-Walker syndrome were available, and no other imaging documents or records of different hearing tests were available.

Regarding growth assessment, the length and weight curve remained upward throughout the first year of life, but the BMI curve was downward at times, and the head circumference was linear and below the z-score -2, as shown in **Framework 3**. According to the record, the monthly developmental assessment was only recorded at the 11-month appointment and was considered adequate for the child's age.

Framework 3 - Assessments and tests requested at the baby's follow-up appointment.

Date	Testsperformed	Results
03.08.2023 (12 days)	Viral load	Notdetected
04.12. 2023 (47 days)	Viral load	Notdetected
05.15.2023 (80 days)	Weight: 4,500 grams Length: 58 cm Head circumference: 38 cm	Low weight for age ≥ z-score -3 and < z-score -2. Adequate length for age ≥ z-score -2. Adequate for age ≥ -2 z-scores BMI for age Thinness ≥ z-score -3 and < z-score - 2
05.17.2023 (82 days)	VDRL	Non-reactive
06.29.2023 (125 days)	Weight: 5,545 grams Length: 60 cm Head circumference: 38 cm	Underweight for age ≥ z-score -3 and < z-score -2. Appropriate length for age ≥ z-score -2 Underweight for age < -2 z-scores. BMI for age eutrophic ≥ z-score -2 and ≤ z-score +1.
08.09.2023 (166 days)	Weight: 6,500 grams Length: 64 cm Head circumference: 40 cm	Weight appropriate for age ≥ z-score -2 and ≤ z-score +2. Appropriate length for age ≥ z-score -2 Below expected for age < -2 z-scores. BMI for age eutrophic ≥ z-score -2 and ≤ z-score +1.
06.02.2024 (11 months)	Weight: 8,000 grams Length: 71 cm	Weight appropriate for age ≥ score-z -2 e ≤ score-z +2; Appropriate length for age ≥ score-z -2 BMI for age eutrophic ≥ score-z -2 e ≤ score-z +1.

Source: Cañedo MC, et al., 2025.

DISCUSSION

The newborn had intrauterine growth restriction and was born underweight, with suspected central nervous system malformations. These signs are usually associated with uterine infections such as syphilis, toxoplasmosis, rubella, cytomegalovirus, herpes, and Zika (STORCH + Z) (BRASIL, 2022). In addition, the mother had HIV, received ART during gestation, and had a history of illicit drug use. According to a study, the incidence of low birth weight and preterm babies is associated with antiretroviral therapy and the use of tobacco and illegal drugs (LOPES MAB, et al., 2007).

The mother's data draws attention to conditions that could confer greater biopsychosocial risk to the binomial in the case presented. According to the literature, being female, having reached adulthood, having low schooling, belonging to the black race, having multiple sexual partners, inconsistent condom use, alcohol consumption, and early sexual initiation are risk factors for HIV infection among young people (BOSSONÁRIO PA et al. 2022) as well as syphilis, pregnant women aged between 20 and 29, with low levels of schooling and brown skin color (KISNER JGM et al., 2021). The puerperal woman in this study started prenatal care at seven weeks' gestation and received early treatment for syphilis and HIV infection. However, she had to restart therapy for syphilis postpartum due to an increase in VDRL titers. As the mother had an undetectable viral load, the newborn was classified as low risk for vertical HIV infection and was,

therefore, exclusively prescribed Zidovudine for 28 days. According to Brazil (2023), early treatment of children exposed to or infected with HIV should include the three antiretroviral drugs, Zidovudine, Lamivudine, and Raltegravir, used for four weeks. However, low-risk cases can be submitted to prophylaxis with Zidovudine alone for four weeks. As the newborn was more than 35 weeks pregnant, the established dose was 4mg/Kg/dose every 12 hours (BRASIL, 2023).

The passage of maternal IgG anti-HIV antibodies through the placenta, especially during the last trimester of pregnancy, interferes with the diagnosis of vertical infection. Maternal antibodies can persist in the child for up to 18 months after birth. Therefore, the detection of anti-HIV antibodies is not sufficient to establish the diagnosis of HIV until 18 months of age, and a viral load assessment (CV-HIV) is necessary (BRASIL, 2023).

A small change in the total bilirubin level about the indirect bilirubin level was observed in the newborn in question, which may be related to a contraindication to breastfeeding (KETSUWAN S et al., 2017; QATTEA I et al., 2022). The alteration in hearing screening observed in the newborn, in this case, may be related to exposure to HIV and *T. pallidum* and the mother's use of licit and illicit drugs, antiretroviral therapy received during pregnancy, and the newborn's low birth weight (GORDON-LIPKIN E et al., 2021).

In addition, populations living in vulnerable situations, such as women living with HIV, should use long-acting reversible contraception (LARC), as well as assistance and counseling regarding the prevention of cases of vertical HIV infection. However, the patient discussed in this report was discharged from the hospital only with a recommendation to use oral contraceptives. However, it is known that hormonal contraceptives can interfere with the action of antiretroviral drugs and should, therefore, be selected with caution (BRASIL, 2022). Follow-up in the specialized service, there are flaws related to the collection of tests to monitor exposure to *T. pallidum* and HIV in this first year of life; the viral load was checked at 12 and 47 days of birth, and the VDRL at 82 days of life. About viral load (VLHIV), the first sample should be taken immediately after birth. For any VLHIV whose result is detectable, the immediate collection should be indicated for pro-viral DNA (preferably) or a new VLHIV collection, regardless of the value. If the pro-viral DNA result is detectable or the result of the second VLHIV is equal to or greater than 100 copies/mL, vertical transmission of HIV to the child is considered to have occurred (BRASIL, 2023).

Regarding exposure to syphilis, the Brazilian Ministry of Health recommends that the non-treponemal test be carried out at 1, 3, 6, 12, and 18 months of age and that laboratory follow-up be interrupted after two consecutive non-reactive tests (BRASIL, 2022). The baby had a VDRL of 1:4 at birth, lower than the mother's titration, and at three months, a negative result and laboratory follow-up were suspended. In the clinical follow-up of children with syphilis living with HIV, monitoring is recommended every three months during the first year of life. If there is still reactivity at decreasing dilutions, monitoring should be maintained every six months until stabilization. In addition, false negative results are more common in people living with HIV (PLHIV). Therefore, in the event of suspicion, it is essential to consider the prozone effect (BRASIL, 2023).

In addition, the child's growth and development assessment showed low cephalic perimeter values for age, which may be related to low birth weight. Still, the intrauterine diagnosis of Dandy-Walker Malformation requires attention from the multidisciplinary team. The clinical signs of Dandy-Walker Malformation are delayed psychomotor development, hypotonia, microcephaly, and hydrocephalus (FONSECA MSM et al., 2017; RIBEIRO CGB, BRISIGHELLI NETO A, 2022). They emphasize the importance of checking the head circumference at all follow-up appointments. To reducing infant mortality requires urgent action to reduce social inequalities (BARBOSA TAGS et al. 2019). The incidence of STIs and the use of licit and illicit drugs are related to congenital malformations and low birth weight in newborns. Therefore, monitoring these newborns and evaluating the quality of prenatal, delivery, and postpartum care is necessary. This study highlights the importance of adequate prenatal care and early diagnosis and treatment of HIV and syphilis.

ACKNOWLEDGEMENTS AND FUNDING

The National Council for Scientific and Technological Development (401727/2020-3 and 307946/2022-3) provided funding. We would also like to thank the CNPq for granting the scholarships. We also thank FUNDECT and UFGD.The funding agencies had no role in the study's design, data collection and analysis, decision to publish, or manuscript preparation.

REFERENCES

1. BARBOSA TAGS, et al. Mortalidade infantil evitável e vulnerabilidade social no vale do Jequitinhonha, Minas Gerais, Brasil. Revista Mineira de Enfermagem. 2020; 23(1).
2. BOSSONARIO PA, et al. Risk factors for HIV infection among adolescents and the youth: a systematic review. Revista Latino Americana de Enfermagem. 2022; Oct3;30(spe):e3697.
3. BRASIL. Boletim epidemiológico HIV e AIDS. Ministério da Saúde. 2023. Disponível em: https://www.gov.br/aids/pt-br/central-de-conteudo/boletins-epidemiologicos/2023/hiv-aids/boletim-epidemiologico-hiv-e-aids-2023.pdf/view. Acessado em: 29 de agosto de 2024.
4. BRASIL. Protocolo Clínico e Diretrizes Terapêuticas Manejo da Infecção pelo HIV em Crianças e Adolescentes Módulo 1 - Diagnóstico, manejo e acompanhamento de crianças expostas ao HIV. Ministério da saúde. 2023. Disponível em: https://www.gov.br/conitec/pt-br/midias/consultas/relatorios/2023/protocolo-clinico-e-diretrizes-terapeuticas-manejo-da-infeccao-pelo-hiv-em-criancas-e-adolescentes-modulo-1-diagnostico-manejo-e-acompanhamento-de-criancas-expostas-ao-hiv. Acessado em: 13 de julho de 2024.
5. BRASIL. Guia para certificação da eliminação da transmissão vertical de hiv, sífilis, hepatite b e doença de chagas. Ministério da Saúde. 2023. Disponível em: https://www.gov.br/aids/pt-br/central-de-conteudo/publicacoes/2023/guia_versao-preliminar.pdf. Acessado em: 02 de agosto de 2024.
6. BRASIL. Guia prático: diagnóstico de anomalias congênitas no pré-natal e ao nascimento [recurso eletrônico] / Ministério da Saúde. 2022; p59-61. Disponível em: http://plataforma.saude.gov.br/anomalias-congenitas/guia-pratico-anomalias-congenitas.pdf. Acessado em: 31 de julho de 2024.
7. BRASIL. Protocolo Clínico e Diretrizes Terapêuticas para Manejo da Infecção pelo HIV em Crianças e Adolescentes. Ministério da Saúde. 2017. p222. Disponível em: https://antigo.aids.gov.br/pt-br/pub/2017/protocolo-clinico-e-diretrizes-terapeuticas-para-manejo-da-infeccao-pelo-hiv-em-criancas-e. Acessado em: 25 de agosto de 2024.
8. CAMBOU MC, et al. Maternal HIV and syphilis are not syndemic in Brazil: Hot spot analysis of the two epidemics. PLoSOne 16: e0255590.
9. FONSECA MSM, et al. Malformação de Dandy-Walker. Revista da Faculdade de Ciências Médicas de Sorocaba. 2017;19(1):4-5
10. GORDON-LIPKIN E, et al. Prenatal cytomegalovirus, rubella, and Zika virus infections associated with developmental disabilities: past, present, and future. Developmental medicine & child neurology. 2021;63(2):135-43.
11. KETSUWAN S, et al. The Association of Breastfeeding Practices with Neonatal Jaundice. The Journal of the Medical Association of Thailand. 2017; 100(3):255–261.
12. KISNER JGM, et al. Perfil epidemiológico dos casos notificados de sífilis congênita no município de Porto Velho entre os anos de 2010 a 2020. Revista Eletrônica Acervo Saúde. 2021;13(6): e7953.
13. LOPES BB, et al. Epidemiology of HIV in pregnant women and its relationship with the period of the COVID-19 pandemic. Revista da escola de Enfermagem da USP. 2023;57:e20220339.
14. LOPES MAB, et al. Avaliação ultra-sonográfica, ecocardiográfica fetal e resultados perinatais em gestantes portadoras do HIV em uso de terapia anti-retroviral. Revista Brasileira de Ginecologia e Obstetricia [Internet]. 2007Oct; 29(10):497–505.
15. QATTEA I, et al. Neonatal hyperbilirubinemia and bilirubin neurotoxicity in hospitalized neonates: analysis of the US Database. Pediatric Research. 2022; 91: 1662-1668.
16. RIBEIRO CGB, et al. Síndrome de Dandy-walker: relato de caso. Journal of Medical Residency Review. 2022; 1,e012,p.01-07.
17. ROCHA AFB, et al. Complications, clinical manifestations of congenital syphilis, and aspects related to its prevention: an integrative review. Revista Brasileira de Enfermagem. 2021;74(4):e20190318.
18. SOHN AH, HAZRA R. The changing epidemiology of the global paediatric HIV epidemic: keeping track of perinatally HIV-infected adolescents. Journal of the International AIDS Society. 2013; 16:18555.
19. TRINDADE LNM, et al. HIV infection in pregnant women and its challenges for the prenatal care. Revista Brasileira de Enfermagem, 2021; 74:(Suppl 4):e20190784.
20. UNAIDS. The urgency of now: AIDS at a crossroads. Geneva: Joint United Nations Programme on HIV/AIDS. 2024. Disponível em: https://www.unaids.org/sites/default/files/media_asset/2023-global-hiv-prevention-coalition-scorecards-key-findings_en.pdf. Acessado em: 15 de agosto de 2024.
21. URBAN MF, CHERSICH MF. Dandy-Walker variant in an infant prenatally exposed to antiretroviral medication. SAMJ. 2007Oct; 97(10).
22. VASCONCELOS MSB, et al. Coinfecção entre HIV e Sífilis: principais complicações clínicas e interferências no diagnóstico laboratorial. Revista Brasileira de Análises Clínicas 53:(1):15-20.