Case report

Case of post-treatment trans-placental congenital herpes in Sri Lanka – a case report and a literature review

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Abstract

Herpes Simplex Virus (HSV) is a common sexually transmitted viral pathogen world wide which can cause devastating morbidity and mortality in foetus and newborn. While intra-partum transmission is being the commonest, trans-placental infection is rare with a higher mortality rate despite of proper management. Congenital herpes presents as a classical triad of cutaneous, neurological, and ophthalmic manifestations. In this article, we discuss a case of post-treatment trans-placental congenital herpes infection with a comprehensive literature which we believe the first reported case in Sri Lanka.

Key words: Herpes Simplex Virus, trans-placental, congenital herpes, post-treatment, anomalies, Sri Lanka

Introduction

Herpes Simplex Virus (HSV) is a common viral pathogen worldwide which can cause deadly infection in newborn. Congenital herpes (CH) is defined as infection during pregnancy or within 48 hours of birth and presents as a classical triad of cutaneous, ophthalmic and neurological involvement[1,2]. Vertical transmission commonly occur during intra-partum and post-partum periods[3]. In-utero trans-placental infection is the rarest of all, and accounts only for incidence of 1 in 100,000 - 300,000 births[2,4]. It leads to disseminated infection in the foetus with malformations and multi-organ failure causing foetal death or severe morbidity. Classical triad may or may not be seen in the spectrum of presentation.

In this article we hope to document a case of trans-placental transmission of herpes, which we believe is recorded for the first time in Sri Lanka.

Case report

A previously healthy, 18 year old, primi-gravida with initial negative antenatal HIV (type 1 & 2) antibody test and VDRL screening tests at booking visit and rhesus positive blood group was presented with fever and a single painful vulval ulcer at 18 + 3 weeks of gestation. Primary genital HSV-2 infection was diagnosed with viral studies and treated with oral Acyclovir 400mg 3 times daily for 5 days. Routine anomaly scan with objective assessment on virus related abnormalities at 20 weeks was normal. She

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was managed by a multidisciplinary team involving obstetrician and venerologist. She was asymptomatic up until 29 weeks, where she developed a recurrent episode of HSV and treated with oral Acyclovir 800mg 5 times daily for 5 days. Routine ultrasound scan revealed features of early foetal hydrops with ventriculomegaly, pleural effusion, ascites and polyhydroamnios. At 30 weeks, mother started preterm labour after few hours of premature rupture of membranes. No active ulcers were present at delivery. The baby girl with of APGAR of 1^2,5^3,10^3 expired in few minutes after delivery despite resuscitation.

Baby had widespread cutaneous vesicles in body. Pathological postmortem of baby showed hydranencephaly with minimal amount of brain paranchyma, hepatomegaly and multiple HSV lesions in eyes, lungs and liver. Viral culture samples of all organs and vesicles were strongly positive for HSV-2. Placental histology was normal except for umbilical cord inflammation. Asymptomatic mother was discharged with follow up for herpes.

Discussion

Genital herpes can be caused by Herpes Simplex Virus (HSV) human strains type 1 or 2 and either strain can cause neonatal herpes[5]. The primary HSV infection of the mother is usually symptomatic with single or several painful blisters[6]. However some women can be asymptomatic[7,8].

Rarely severe primary infection in early course of pregnancy may lead to congenital herpes if not treated promptly[4,9]. It can result in intra uterine death of foetus, preterm delivery and despite of appropriate treatment neonatal mortality rate is high[10].

Due to the presence of trans-placentally acquired maternal neutralizing antibodies, the risk of congenital or neonatal herpes is very low during recurrent herpes episodes[5]. As seen in case patient, even though she was treated for primary and recurrent infection optimally, yet the foetus developed congenital herpes. Possible explanations could be either due to Acyclovir resistant HSV strain or animmune-compromised status of the mother. As she didn't have clinical evidence of immunosuppression, presence of a resistant strain could be the cause for reactivation of the latent virus. Emergence of an Acyclovir resistance HSV strains have been shown in literature[11]. Therefore it is important to analyze viral resistance patterns to lessen the incidence of congenital herpes in her future pregnancies, as if present, both mother and the partner should be treated with higher dose for longer duration. In the case patient we could not do viral resistance patters in baby as fresh viral samples were not available nor in mother as she didn't have active ulcers. During the course of follow up, once she develop a recurrent episode, she will be assessed for resistant HVS strains. She and her partner were counselled regarding the risk of congenital herpes in future pregnancies.

Foetal ultrasonography is of immense importance in detecting effects of embryogenesis due to HSV to suspect congenital herpes of the baby in a mother with asymptomatic genital herpes. They include hydranencephaly, ventriculomegally, microcephaly, intracranial calcifications, intra-uterine growth restriction and polyhydroamnios according to literature[2-10,12]. And also symptomatic babies at delivery, virologically or histologically demonstrated herpetic infection within 24 hours of rupture of membranes, and evidence of viral placentitis (necrosis of villi, chorion, and amnion with or without involvement of blood vessels) direct the diagnosis towards congenital herpes as evident from the indexed case[9,10].

National STD/AIDS control programme reports 13.6% prevalence of diagnosed genital herpes among Sri Lankan population in 2019[13]. A study done by Cowan et al in 2003, have reported a crude HSV-2 prevalence rate of 8.3% among antenatal clinic attendees in Ragama, Sri Lanka[14]. It implies that the prevalence of HSV infection among Sri Lankan population is higher than we expect.

According to the National STD/AIDS control programme, our case is possibly the first reported case of Congenital Herpesdue to trans-placental infection in Sri Lanka.

Early detection and treatment of maternal primary infection is crucial to prevent trans-placental transmission of the virus. As most of patients could be asymptomatic or only have subtle symptoms, primary infections of the mother tend to get misdiagnosed or ignored.

Initiation of antiviral therapy to newborn without delaying for results of cultures should be done to reduce the morbidity and mortality[2]. However, in our case, the foetal infection and anomalies were severe enough to cause an early neonatal death.

Conclusion

Trans-placental congenital herpes is an extremely rare disease that lead to severe foetal morbidity and mortality. Through the first reported case in Sri Lanka, we encourage early suspicion, detection, and treatment of primary infection and importance of parallel thinking of emergence of Acyclovir resistant strains, to minimize the negative foetal outcomes of congenital herpes.

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