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TEACHING FILES (GRAND ROUNDS)

A MOTHER WITH BAD OBSTETRIC HISTORY - IS IT DUE TO CYTOMEGALOVIRUS?

Suhani Jain[1], Ira Shah[2].

[1]Grant Government Medical College, Sir JJ Group of Hospitals, Mumbai, India,
[2]Consultant in Pediatric Infectious Diseases, Levioza Health Care, Mumbai, India.

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Clinical Problem:
A 32-year-old pregnant female at 9.5 weeks of gestation presented for ruling out fetal deaths due to intrauterine infection. She has a bad obstetric history with a medical termination of pregnancy (MTP) a year ago at 5.5 months of gestation due to congenital malformations in the baby. She also had a spontaneous abortion at 14 weeks of gestation 6 months ago. While screening for infections in the first pregnancy , it was found that Rubella IgG was positive (73.4 AU/ml), varicella zoster virus (VZV) IgG was positive (1.01 AU/ml) as well as cytomegalovirus (CMV) IgG was raised. For the second pregnancy , Rubella IgG was 117 AU/ml , VZV wasn't detectable and CMV IgG was 49 AU/ml. For present pregnancy, she was followed up with IgG levels of rubella , VZV and CMV (Table 1).

Table 1. Serial TORCH titres in current pregnancy.

Gestational age (months)	Rubella IgG (AU/ml)	Varicella zoster IgG (AU/ml)	Cytomegalovirus (CMV) IgG (AU/ml)	CMV avidity
7 weeks	67	negative	218	
11 weeks			190.45	0.91 (high)

Is the lady's bad obstetric history due to CMV infection?

Discussion:
A bad obstetric history (BOH) is defined as two or more consecutive spontaneous abortions, a history of intrauterine foetal death, intrauterine growth retardation, stillbirth, early neonatal death and/or congenital anomalies. Genetic, hormonal, abnormal maternal immune response and maternal infections are possible causes of BOH.[1] The most common cause of congenital infection is CMV. It is extremely important to differentiate between primary and secondary CMV infection in the mother to know the possible etiology of infection (congenital or acquired) in the baby. Primary infection occurs when the mother is first exposed to the virus. It is confirmed when a previously seronegative woman develops CMV-specific IgG 3-4 weeks after an acute episode.[2] Secondary infection can develop due to reactivation of a previously latent virus or reinfection with a different strain. Secondary infection can be difficult to diagnose. An increase in IgG titre is unreliable, and only invasive testing can confirm the diagnosis.[2]

Hence this patient's increase in IgG titre over 4 weeks is inconclusive.

Maternal CMV should be diagnosed by positive IgM/IgG seropositivity but IgG avidity is frequently required to determine the timing of primary infection. Avidity testing is the strength of an antibody to bind a target antigen, which increases over the period of time as immune response against the specific antigen matures. Low-avidity anti-CMV IgG suggests a recent acute infection while presence of high-avidity antibodies at 12 to 16 weeks of gestation indicates a previous infection, most likely prior to conception.[3] In our patient , there's high CMV avidity indicating CMV infection prior to conception.

Thus, the lady's BOH is not due to CMV infection.

Compliance with ethical standards
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Conflict of Interest: None

References:

1. Abdullah AD Al Rukeimi, Hassan A Al Shamahy, et al. Association of Cytomegalo-Virus and Rubella Virus Infections in Pregnant Women with bad Obstetric History. W J Gynecol Women's Health. 2(3): 2019 WJGWH. MS.ID.000538.
2. Ciobanu AM, Gica N, Gica C, Botezatu R, Furtuna M, Peltecu G, et al. Cytomegalovirus Infection in Pregnancy - Counselling Challenges in the Setting of Generalised Testing. Maedica (Bucur). 2020 Jun;15(2):253-7.
3. Carlson A, Norwitz ER, Stiller RJ. Cytomegalovirus infection in pregnancy: should all women be screened? Rev Obstet Gynecol. 2010;3(4):172-9.

Address for Correspondance: Suhani Jain, Flat number 402, Ramdeo Arise, Behind Hotel Airport Centre Pt, Wardha Road, Nagpur-440025.
Email: suhani2208@gmail.com