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Lupus: Open Acess

Commentary

Phosphodiesterase Inhibitors: A New Opportunity for Lupus Patient with Oligohydramnios

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DESCRIPTION

Systematic Lupus Erythematosus (SLE) most commonly affects females in the reproductive age group. SLE is among the few autoimmune diseases which tends to worsen during pregnancy. As such pregnancy in SLE patients is a very complicated aspect to deal with. Most patients with active disease are advised to use contraception and avoid pregnancy. However, procreation is a natural human instinct and due to several out-of-control factor, you may often wind up with a patient who is pregnant with active lupus. Occasionally, SLE may even present for the first-time during pregnancy. Our case depicts a similar clinical scenario where patient presented with active lupus nephritis for the first time during the 17th week of her gestation [1]. Interestingly, it was not the nephritis that landed the patient in trouble, but it was oligohydramnios, a complication that rheumatologists don't often consider in their prerogative.

Oligohydramnios occurs in <1% of preterm pregnancies and 5% of term pregnancies [2]. Incidence is increased to about 12% in patients with SLE [3]. Oligohydramnios predisposes the foetus to higher rates of Intrauterine Growth Restriction (IUGR), major congenital anomalies and perinatal mortality, with IUGR being the most common complication. Prognosis in patients with oligohydramnios depends on the underlying cause. Foetal causes like chromosomal anomalies, genitourinary tract malformations or premature rupture of membranes are generally associated with severe oligohydramnios and poorer outcome. These patients usually present in the second trimester or early third trimester. Oligohydramnios during second trimester is associated with worse outcomes as compared to late third trimester with survival being 10% *vs.* 85%, respectively [4]. On the other hand, oligohydramnios in the third trimester is usually due to maternal factors like preeclampsia, diabetes, intrauterine infections, foetal anomalies, maternal drug abuse (ACE inhibitors, NSAIDs, alcohol, smoking, and cocaine), SLE or antiphospholipid syndrome. Treatment of the underlying cause often results in improvement in liquor [3]. However, many cases may remain idiopathic. In majority of such patients, uteroplacental insufficiency is seen on doppler imaging [5].

Management of oligohydramnios in pregnancy mostly relies on treating the underlying cause. Approach to treatment in patients with idiopathic oligohydramnios remains undefined. Strategies like improving maternal hydration have shown to improve outcomes. Several case reports have reported benefit with use of drugs like phosphodiesterase type 5 inhibitors and desmopressin [5,6]. By inhibiting PDE-5 enzyme activity, these drugs increase cGMP and thereby stimulate the release of nitric oxide in vessels. This dilates the myometrial small arteries leading to vasodilatation and improvement in placental perfusion. This improvement in perfusion leads to better transport of nutrients to the developing foetus and thus helps in the growth of IUGR foetus. In our case, we had good results with use of tadalafil 20 mg daily [1]. Patient's liquor improved gradually and became normal within a few weeks. Ganla, et al. showed that in a cohort of 50 patients, sildenafil was associated with improved AFI and other foetal parameters in non-lupus pregnant patients with IUGR and oligohydramnios [5]. Sildenafil use was associated with prolongation of gestational age at delivery by an average of 35 days, avoiding complications associated with prematurity. All children had good Apgar scores and no adverse events were seen. Such studies are encouraging regarding the safety of these drugs in pregnancy. Large population-based studies are needed to further develop confidence in the use of such drugs. Phosphodiesterase type 5 inhibitors may offer a new opportunity to improve perinatal outcomes in patients with oligohydramnios and IUGR.

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