Downloaded from http://www.jri.ir

and Doppler. Unfortunately, Doppler again showed absent end diastolic flow after a few days and 2 doses of 12 *mg* betamethasone injection were administered for her 24 *hr* apart. Repeat Doppler after 3 days showed reversed end diastolic flow. At a gestational age of 30 weeks, then, patient and her husband were counseled regarding the need for emergency Caesarean section and the associated risks of perinatal morbidity and mortality. A live male baby of 800 *gr* was delivered and shifted to Neonatal Intensive Care Unit (NICU) for further management. After 80 days of NICU care, the baby was finally discharged healthy with a weight of 2.3 *kg*. After 1 month of discharge, mother and infant came for follow up and both were doing perfectly well. Also, the infant was checked by pediatrician and was found healthy.

Discussion

In pregnancies with fetal growth restriction and without preeclampsia, a reversible increased myometrial arterial tone by phosphodiesterase inhibition has been reported *in vitro* (3). Sildenafil citrate induces vasodilation through inhibition of type 5 phosphodiesterase (PDE5) (4). PDE5 is responsible for the degradation of cGMP to guanosine monophosphate. Therefore, inhibiting PDE5 delays the breakdown of cGMP and increases vasodilation (5). A recent report suggested that Sildenafil citrate stimulates vasodilation in myometrial biopsies collected from IUGR pregnancies at the time of Cesarean section (4).

In this study, Sildenafil with fetal growth restriction was used in an attempt to induce vasodilatation and improve uteroplacental perfusion resulting in improved Doppler indices.

Currently, there is no effective therapy for severe early-onset FGR. Sildenafil citrate vasodilates the myometrial arteries isolated from women with IUGR-complicated pregnancies. Sildenafil treatment was associated with increased fetal AC growth (6).

Conclusion

To achieve optimal fetal growth, adequate blood flow in uteroplacental vascular function is essential. Abnormal vasculature adaptation, resulting in aberrant blood flow, has been implicated as a possible cause of fetal growth restriction (FGR) though Samangaya *et al*. ruled out prolonged pregnancy in women with preeclampsia using Sildenafil (7). Sildenafil, as a vasodilator has also emerged as a potential management option in the treatment of FGR and preeclampsia by later normalization in velocimetric profile.

Conflict of Interest

The authors declare no conflict of interest.

References

1. Soregaroli M, Valcamonico A, Scalvi L, Danti L, Frusca T. Late normalisation of uterine artery velocimetry in high risk pregnancy. Eur J Obstet Gynecol Reprod Biol. 2001;95(1):42-5.
2. Zoma WD, Baker RS, Clark KE. Effects of combined use of sildenafil citrate (Viagra) and 17beta-estradiol on ovine coronary and uterine hemodynamics. Am J Obstet Gynecol. 2004;190(5):1291-7.
3. Wareing M, Myers JE, O'Hara M, Kenny LC, Taggart MJ, Skillern L, et al. Phosphodiesterase-5 inhibitors and omental and placental small artery function in normal pregnancy and pre-eclampsia. Eur J Obstet Gynecol Reprod Biol. 2006;127(1):41-9.
4. Wareing M, Myers JE, O'Hara M, Baker PN. Sildenafil citrate (Viagra) enhances vasodilatation in fetal growth restriction. J Clin Endocrinol Metab. 2005; 90(5):2550-5.
5. Ballard SA, Gingell CJ, Tang K, Turner LA, Price ME, Naylor AM. Effects of sildenafil on the relaxation of human corpus cavernosum tissue in vitro and on the activities of cyclic nucleotide phosphodiesterase isozymes. J Urol. 1998;159(6):2164-71.
6. von Dadelszen P, Dwinnell S, Magee LA, Carleton BC, Gruslin A, Lee B, et al. Sildenafil citrate therapy for severe early-onset intrauterine growth restriction. BJOG. 2011;118(5):624-8.
7. Samangaya RA, Mires G, Shennan A, Skillern L, Howe D, McLeod A, et al. A randomised, double-blinded, placebo-controlled study of the phosphodiesterase type 5 inhibitor sildenafil for the treatment of preeclampsia. Hypertens Pregnancy. 2009; 28(4):369-82.

Downloaded from http://www.jri.ir