

**Editorial****Abnormal Trophoblast Invasion: The Culprit of The Major Obstetrics Problems****Sri Sulistyowati**

Pathogenesis of preeclampsia as the consequences of the interaction failure between trophoblast and womb, mainly in the 1<sup>st</sup> trimester leads to a stress response in the placenta. This may cause poor growth and development of the villous tree, deteriorating transfer of oxygen and nutrients to the fetus.<sup>1</sup> In the simultaneous way huge number of placental debris as the result of necrotic-apoptotic process is released into maternal circulation.<sup>1,2</sup> That of phenomenon related to syncytiotrophoblastic stress is triggering endothelial dysregulation and extreme inflammation process, and so do the clinical respond related, such as: hypertension, proteinuria, edema, convulsion, cerebral edema, acute renal failure, acute liver dysfunction, thrombocytopenia (which are as the maternal complications) and fetal growth restriction, preterm delivery, still birth (which are as the fetal complications).<sup>3</sup>

Fetal growth restriction (FGR) which could be develop solely or as one entity of early-onset preeclampsia is mostly caused by the poor attitude of extravillous trophoblast cells (EVT) in doing its work on maternal spiral artery remodeling process.<sup>4</sup> As we can see clear from the large data of scientific evidence, the only significant modality to prevent FGR until recent is by giving low-dose aspirin before 16 weeks of gestational age in selected pregnancies with high resistance index of uterine artery shown by doppler velocimetry ultrasound.<sup>5</sup> Beyond that, only timely delivery after series of close monitoring that will give better perinatal outcome.<sup>6</sup> This will often end with preterm delivery, which increases the percentage of preterm birth in general.<sup>6</sup>

In the contrary, placenta accreta spectrum (PAS) is a condition where the trophoblast invasion is too aggressive. The development of PAS is a complex multifactorial process related to the combination of decidual-myometrial defect (as the results of previous c-section or other gynecological surgery), absence of the basal plate on decidual layer, and the excessive extravillous trophoblastic invasion.<sup>7</sup> The attitude of trophoblast in PAS is similar to tumor behaviors which are: inducing abnormal angiogenesis, sustained proliferative signaling, resisting cell death, evading immune destruction, and increasing energy metabolism.<sup>8</sup>

Abnormal trophoblast invasion is the lesson of obstetrics and the lesson of life. Too much is against the law of life and will result in negative way. Too shallow, will result on poor placentation: preeclampsia, FGR, preterm delivery, and too deep will result on PAS. So, if we want to avoid the major obstetric problems, is the duty of obstetricians to precede trophoblast to behave normally, including predicting abnormal behavior and preventing it.

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