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CORRESPONDENCE

Prediction of fetal loss by first-trimester crown-rump length in IVF pregnancies: prediction rules to avoid misinterpretation

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I was interested to read the paper by Gabbay-Benziv R and colleagues published in *Arch Gynecol Obstet* 2017 Jan. The purpose of the authors was to evaluate the association between small crown-rump length (CRL) and fetal loss ≤22 weeks in IVF pregnancies [1]. All singleton IVF pregnancies within a 5-year period, with a live embryo on first-trimester ultrasound and verified pregnancy outcome were included (397 pregnancies). They reported that total of 64 pregnancies had CRL ≤tenth percentile for gestational age. The rate of fetal loss in this group was significantly higher than in pregnancies with CRL> tenth percentile (17.2 vs. 6.6%, $p=0.005$, OR = 2.93, 95% CI 1.2–6.7). In both groups, the majority of fetal losses occurred ≤10 weeks of gestation. Based on their conclusion, in IVF pregnancies with a live embryo, a small CRL at 40–80 days' gestation may predict fetal loss [1].

For prediction studies, we need two different cohort data set or at least one cohort dataset splitting that to develop our prediction model and then to validate it. Without validation of prediction models, most of the times, misleading results will be the main outcome of such researches [2–6].

Moreover, statistically significant finding do not have priority to clinically important results for clinical decision making especially in prediction studies. Statistically significant and clinically important are two different issues and in clinical researches, the strength of the relation is more important than *p* value [2–6].

Finally, in prediction studies, we must assess interaction between important variables because the final result can extremely change in case of having qualitative interaction [2–6]. It means without assessing interaction terms most of the times misleading message will be our main conclusion in prediction studies.

Compliance with ethical standards

Conflict of interest S. Sabour declares that he has no conflict of interest.

Ethical approval This article does not contain any studies with human participants performed by any of the authors.

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