Using transperineal ultrasound to predict labor onset—reply

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Thank you for the constructive editorial commentary on our recently published article "*Using transperineal ultrasound to predict labor onse*t".

We agree with the Prof. Edward Araujo Júnior that the majority of pregnant women then will go into labor after 39 weeks, and induction of labor at 39 weeks in low-risk women did not result in a significantly lower frequency of a composite adverse perinatal outcome. And induction of labor in term at 39 weeks of gestation will increase the cost. That is the reason we are doing our research.

Labor onset occurs as a switch from uterine quiescence to uterine contraction, and it is the result of multiple factors. However, those factors promoting the labor onset are poorly understand (1). Because there are fundamental physiological different between human and other animals, the information derived from animal models has had only limited applicability (2). Due to the unclear labor initiation mechanism, the clinician diagnosis labor onset only by observing the clinical manifestations, which mainly depends on the experience of a clinician. But the time of labor onset are most concerned by clinician, pregnant women and their families in our daily work. And pregnant women will receive more attention in the family in China. Accurate determination of labor time can help pregnant women and their families prepare psychologically, and also better assist clinicians to prepare for the next medical measures.

Prof. Edward Araujo Júnior affirmed the value of ultrasound for the evaluating the progress of labor. Many studies have reported that intrapartum ultrasound can predict pregnancy outcome, including time to delivery and delivery mode (3,4). With the development of ultrasound in the prediction of labor onset, ultrasonic examination has become an integral part of intrapartum as well as antepartum care. Besides, several studies have reported the ultrasound's important role in predicting the time of labor onset (5-7). Ultrasound is a good method which can transform the subjective measurement indexes of clinicians into more comparable and objective ultrasonic parameters, so as to better observe the fetal head decline and the changes of bone birth canal in the third trimester of pregnancy.

In China, ultrasound is a routine test for women after 39 weeks gestation. We can do transperineal ultrasound after the routine test avoiding the multiple trips to hospital. Of course, pregnant women will pay a certain amount of medical expenses. But comparing to the medical cost of inducing labor for a woman who will be in labor for a short time, this medical resources is a very little waste (8). For postterm pregnant women, using transperineal ultrasound to evaluate prenatal condition can also help decrease the rate of meconium staining in the amniotic fluid, 5-min Apgar score less than 7, need for newborn resuscitation and admission to the NICU (9). These are huge medical bills and family burdens.

Most recent studies predicting labor onset had a minimum forecast of seven days. For example, in Rozenberg's study, they reported cervical length was as efficient as the Bishop score in predicting spontaneous onset of labor within 7 days (10). Our study seeks to find more ultrasound indicators to predict labor onset, and those

indicators will be used in our research on shorter time to labor prediction. That will provide clinicians with more objective auxiliary examination indicators. In addition, transperineal ultrasound is a main examination methods of pelvic ultrasound, so we can also collect the data of pelvic floor change and fetal head position change at the same time. These data will be used for our further research on preterm birth and postterm pregnant women. Our research team will further enrich the research data, refining group, resulting in a more positive research conclusion.

Footnote

Conflicts of Interest: All authors have completed the ICMJE uniform disclosure from (available at http://dx.doi.org/10.21037/atm-20-3918). The authors have no conflicts of interests to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. The local ethics committee approved the study protocol (No. 2019KY038). Eligible patients received oral and written information and provided signed consent forms.

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