

Predicting Iatrogenic Preterm Birth to Help Better Referral

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ABSTRACT

Iatrogenic preterm birth is now becoming a more and more prominent issue in modern obstetrics. Compared with spontaneous preterm birth, it is more predictable and usually results in better prognosis. Meanwhile, patients with scarred uterus in China are increasing rapidly. Predicting iatrogenic preterm birth in women with scarred uterus can help referral, thus improving the prognosis of both the pregnant and the infant.

Keywords: Iatrogenic preterm birth; Scarred uterus; Cesarean section; Placenta previa

DESCRIPTION

Preterm delivery refers to the delivery happened before 37 weeks of gestation, which is a serious obstetric complication impacting neonatal health and development. Preterm birth can be categorized into spontaneous preterm birth, preterm premature rupture of membranes (PPROM), and iatrogenic preterm birth. In the past 24 years, the incidence rate of spontaneous preterm birth has decreased by 25%, and the incidence rate of iatrogenic preterm birth has been increasing, occupying about 30% preterm birth [1]. At present, most obstetricians focus on spontaneous preterm birth, while iatrogenic preterm birth has been ignored.

Some scholars have found that the rise of preterm birth rate in recent years is mainly due to the increase of iatrogenic preterm birth during late pregnancy, especially in the case of patients with twin pregnancy [2]. Compared with spontaneous preterm birth patients with the same gestational week, patients with iatrogenic preterm delivery usually has a better prognosis, which is mainly due to the use of glucocorticoids and timely referral to upper medical centers with better medical services. For patients referred to upper medical centers, fetal monitoring will become more frequent, and obstetric and neonatal care will be more meticulous. Moreover, when experienced doctors find that the benefits of early delivery outweigh the risks of preterm birth and expectant treatment, doctors will prefer termination of pregnancy. Together, these factors significantly reduce the neonatal mortality rate and severe neonatal complications after iatrogenic preterm birth.

Cesarean section and uterine operations (myomectomy is the most common one) can lead to scarred uterus. Indeed, many studies have shown that women with scarred uterus are more likely to have various obstetric complications (placenta previa,

placenta accreta, uterine rupture, pregnancy bleeding, etc) [3,4]. If the patient is diagnosed with placenta previa in the third trimester of pregnancy, cesarean section will be the only option for delivery, which will form the adverse chain reaction of scarred uterus leading to increased risk of placenta previa during the next pregnancy and resulting in cesarean section again [5]. In our study, we did find that the complications such as gestational hypertension and placenta previa greatly increase the risk of iatrogenic preterm birth [6].

China is a large country with high rate of cesarean section. In fact, the total cesarean section rate has been increasing from 2008 to 2014 [7]. Meanwhile, diseases like uterine leiomyoma further increase the number of scarred uterus cases. With the implementation of the two child policy in 2016, more and more families choose to give birth to a second child, and the number of high-risk women with scarred uterus is also increasing. Although with the change of national policy, the allocation of medical resources tends to be more reasonable, there are still some problems in the hierarchical medical system of China such as delayed referral and wrong referral. Rapid recognition of the patients' condition, appropriate and timely referral can effectively improve the prognosis of both the mother and the child and promote the rational allocation of medical resources.

Unfortunately, there are few studies on the prediction of iatrogenic preterm birth under scarred uterus, and the national standard has not been formulated. Iatrogenic preterm birth and spontaneous preterm birth have different socioeconomic and clinical risk factors, and the same risk factors have different influence on iatrogenic and spontaneous preterm birth [8]. Therefore, it is urgent and important to develop a new and targeted prediction model of iatrogenic preterm birth. Predicting the risk of iatrogenic preterm birth in women with scarred uterus

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can screen out high-risk pregnant women, closely monitor the condition, take effective safeguard measures in advance, and assist with in time transfer to better medical centers when necessary. It could also help to reduce the risk of preterm birth and related complications. Using a variety of statistical analysis software to analyze a large number of clinical data, we established an iatrogenic preterm birth risk prediction model for the pregnant women with scarred uterus.

Indeed, to fundamentally reduce the rate of iatrogenic preterm birth of scarred uterus population, a more direct and intuitive approach is to reduce the cesarean section rate, which is beneficial to patients. However, there are still questions that need to be addressed. How to conduct a good guidance and education for patients so that they can choose a more suitable mode of delivery that are pregnant for the first time? How to accurately and timely evaluate the patient's conditions and help the patient's delivery successfully with the least harm? All of these are the problems that obstetricians need to consider and solve.

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