

Preterm Labor and Birth: Definition, Assessment, and Management

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Incidences of preterm labor and preterm birth have been increasing and becoming global issues. Preterm labor is defined as regular contractions of the uterus starting before 37 weeks of pregnancy that result in changes in the cervix, including effacement and dilation. Preterm birth occurs between 20 to 37 weeks of pregnancy [1].

Why do we have a concern about preterm birth? Because preterm babies may be born with serious health problems. Some health problems such as cerebral palsy can last a lifetime. Other problems such as learning disabilities may appear later in childhood or even in adulthood [2].

There are some well-known causes of preterm labor and preterm birth: 1) Inflammation and/or infection in the fetoplacental unit [2]; 2) Cervical length of at least 25 mm [3]; 3) High fetal fibronectin level (0.050-microgram/mL cut-off, a lower cut-point of 20 ng/mL). If we assess cervical length measurement combined with fetal fibronectin testing in case of a cervical length between 15 and 30 mm, we can improve the identification of women with low risk to deliver spontaneously within 7 days [4].

On the other hand, recent study reported that predictors of preterm labor symptoms in second trimester of pregnancy were smoking experience, pregnancy complications, and pregnancy specific stress. These accounted for 19.2% of the total variation. Predictors of preterm birth were twins, shorter cervix (<25 mm), BMI (>25 kg/m²), and a previous preterm birth. In this report, we will discuss different points between preterm labor symptoms and preterm birth to provide supportive care toward prevention [5].

Lastly, we will discuss management for preterm labor

to prevent preterm birth. What is the decision point? If there is a chance the baby will receive benefit from a delay in delivery, certain medications may be given. These medications include corticosteroids, magnesium sulfate, and tocolytics. Nursing professors should provide students information about effects of those medications for their maternal practicum by ACOG [1].

- Corticosteroids such as dexamethasone and bethamethasone are drugs that can cross the placenta and help speed up the development of the baby's lungs, brain, and digestive organs. Corticosteroids are most likely to help baby when they are given between 24~34 weeks of pregnancy.
- Magnesium sulfate is a medication that may give to women less than 32 weeks pregnant in preterm labor and those who are at risk of delivery within the next 24 hours. This medication may help reduce the risk of cerebral palsy that is associated with early preterm birth.
- Tocolytics are drugs used to delay delivery for a short time (up to 48 hours). They may allow time for corticosteroids or magnesium sulfate for women to transfer to a hospital that offers specialized care for preterm infants. For protection against cerebral palsy, magnesium sulfate also can be used as a tocolytic drug.

A cut-off value of cervical length of 25 mm has been used by clinicians and researchers to screen for women at the highest risk of spontaneous preterm birth. Recently, this group of women has been targeted with interventions to reduce the risk of spontaneous preterm birth including vaginal progesterone, cerclage, and cervical pessary. In addition, current practice guidelines recommend initiation of therapy in high-risk patients with a cervical length of < 25

Key Words: Obstetric labor, Premature; Pregnancy, High-risk; Incidence; Reproductive history; Cervical length measurement

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Received: Sep 1, 2018 / Accepted: Sep 7, 2018

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mm in the mid-trimester. However, risks for women with a previous spontaneous preterm birth with a normal cervix in pregnancy should not be neglected [6].

In conclusion, preterm birth is one of the most common obstetrical complications in humans. After many studies, it appears that its risk factors, causes, and treatments are diverse. We need to know preterm labor symptom so that we have competency in its assessment and management.

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REFERENCES

1. American College of Obstetricians and Gynecologists. Preterm (premature) labor and birth[Internet]. Washington, DC: American College of Obstetricians and Gynecologists; 2016 [cited 2018 August 13]. Available from: <https://www.acog.org/Patients/FAQs/Preterm-Premature-Labor-and-Birth>
2. Gilman-Sachs A, Dambaeva S, Salazar Garcia MD, Hussein Y, Kwak-Kim J, Beaman K. Inflammation induced preterm labor and birth. *Journal of Reproductive Immunology*. 2018;129:53-58. <https://doi.org/10.1016/j.jri.2018.06.029>
3. Predictive value of cervical length measurement and fibronectin testing in threatened preterm labor. *Obstetrical Gynecology*. 2014;123(6):1185-1192. <https://doi.org/10.1097/AOG.0000000000000229>
4. Levine LD, Downes KL, Romero JA, Pappas H, Elovitz MA. Quantitative fetal fibronectin and cervical length in symptomatic women: results from a prospective blinded cohort study. *Journal of Maternal, Fetal, Neonatal Medicine*. 2018;15:1-9. <https://doi.org/10.1080/14767058.2018.1472227>
5. Kim JI, Cho MO, Choi GY. Multiple factors in the second trimester of pregnancy on preterm labor symptoms and preterm birth. *Journal of Korean Academy Nursing*. 2017;47(3):357. <https://doi.org/10.4040/jkan.2017.47.3.357-366>
6. Benoist G1. Prediction of preterm delivery in symptomatic women (preterm labor). *J Gynecol Obstet Biol Reprod (Paris)*. 2016;45(10):1346-1363. <https://doi.org/10.1016/j.jgyn.2016.09.025>