



The impact of maternal position in Labor on fetal occiput posterior position and pregnancy outcomes

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Introduction: The fetal occiput posterior (OP) position account for around 30% in the onset of labor and 5-7% at delivery time. The persistent occiput posterior (POP) position could be due to malrotation of the fetal head to the occiput anterior (OA) position or failure in OP to OA rotation (1). Nulliparity, gestational age ≥ 41 weeks, age > 35 years, African American ethnicity, fetal birth weight ≥ 4000 gr, epidural anesthesia, pelvic capacity limitation, previous OP delivery, anterior placenta position, and short stature of the mother are the most important risk factors for this abnormality (2). The POP position has been linked to a high rate of maternal and neonatal morbidity. These include prolonged first and second stages of labor, instrumental delivery, cesarean section, third- and fourth degree perineal tears (obstetric anal sphincter injuries), back pain, maternal fatigue, chorioamnionitis, postpartum hemorrhage, epidural analgesia, neonatal trauma, low Apgar score, NICU admission, and newborn encephalopathy (3). One of the ways to facilitate the rotation of the fetus's head is the active participation of the mother and changing her position during labor (1).

Lying, standing, sitting on all-fours, and assuming squatting positions by the mother during labor can shorten the first and second stages of labor, decrease cesarean-section and instrumental delivery rates, and correct the OP position. Therefore, the present review study was carried out with the aim of "The Impact of Maternal Position in Labor on Occiput posterior Position of Fetus and Pregnancy Outcomes".

Methods: In this systematic review, searches were made in the databases of Embase, Scopus, Medline, Web of Science, SID, Magiran and IranMedex and Cochrane Central Controlled Trials. Eligible randomized controlled trials evaluating the effect of maternal position on fetal OP position during labor were selected. The keywords used for the



search included labor, occiput posterior, maternal position and pregnancy outcome. A total of 13 articles were found, of which 5 were analyzed.

Result: The results of the present study showed that changing the position of the mother during labor helps the rotation of the fetal head and some fetal outcomes ($P < 0.05$).

Discussion and conclusion: The results of Bahmaei et al study showed that knee chest and semi prone position during labor has an undeniable role in improving fetal OP position and maternal or neonatal complications. the maternal semi-prone position and knee-chest position increased the spontaneous rotation to occiput anterior position in women with the fetus in OP position. Also, these positions were accompanied by an increase in the rate of natural delivery and reduction of low back pain during labor. But the duration of the third stage of labor, the first and fifth minute APGAR score and the rate of admission to NICU, oxytocin usage, perineal tears were not significant compared to the supine position (3). In the study by Gizzo et al. knee-chest position during labor was able to improve the fetal head rotation from OP to OA, significant reduction in the duration of first and the second stages of labor, episiotomy reduction and increase the rate of natural delivery (4). the knee-chest position was associated with pelvic rocking movements. The pelvic rocking is known as a method for a greater match between the fetal head with the cervix and to help facilitate fetal head rotation to OA (1).

Although in some studies, changing the mother's position could not improve maternal outcomes. In the study by Lee Ray et al. lateral asymmetric decubitus position of mother could not change the rotation of fetal head to OA, and the type of delivery compared to the dorsal recumbent posture (5). In a study by Desbrière et al. using the knee-chest position at the time the fetal head station between -5 and -3 could not make a significant change in rotation of OP to OA position (6). Changing the position is a non-invasive and safe way to facilitate the rotation of the fetal head and improve maternal and neonatal outcomes and reduce the rate of cesarean section.

Therefore, it is recommended to conduct studies with a larger sample size to determine the effect of different positions of the mother in accelerating labor and improving outcomes.



Key words: Fetal Occiput Posterior; Maternal Position, Pregnancy Outcomes and labor

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