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Home > Vol 96, No 4 > **Yeekian**

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Comparison of Maternal Factors and Neonatal Outcomes between Elective Cesarean Section and Spontaneous Vaginal Delivery

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Abstract

Background: The rising rate of cesarean section has been of concern worldwide. Maternal factors and neonatal outcomes of cesarean section and vaginal delivery remain unclear.

Objective: To compare the differences of maternal factors and neonatal outcomes between mothers who underwent Elective Cesarean Section (ECS) and spontaneous vaginal delivery (SVD)

Material and Method: A cross-sectional descriptive research studied all delivery data of Queen Savang Vadhana Memorial Hospital between June 1, 2010 and May 31, 2011. Two thousand eight hundred seventy six deliveries were included. From these, 648 mothers delivered by ECS while 2,228 mothers delivered by SVD. The data quality was tested via the agreement between the 115 sampling delivery records and the same delivery of the extracted data. The percent agreement was 99% (minimum 97-maximum 100). Pearson's Chi-square test and an independent t-test were used to compare the distribution or mean of two groups as appropriate. The statistically significant difference was defined as p-value less than 0.05.

Results: The statistically significant differences of maternal factors, and neonatal outcomes between mothers who underwent ECS and SVD were found as follows. The ECS mother showed the mean age (28.7 (3.5) vs. 27.1 (3.8) years, $p < 0.001$), the mean (SD) of number of antenatal care (9.9 (2.8) vs. 7.0 (3.3) times, $p < 0.001$) and the mean (SD) of hematocrit (36.8 (3.3)% vs. 35.8 (3.5)%, $p = 0.001$) greater than SVD mother. The neonates of ECS mother had weight greater than SVD (3,194.5 vs. 3,078.3 grams, $p = 0.001$), and showed the percentage of presence of respiratory distress syndrome (RDS) higher than the neonate of SVD mother (5.5% vs. 0.4%, $p = 0.010$). The neonates of SVD mother had mean Apgar scores at first minute (8.0 vs. 7.9 scores, $p = 0.015$) and at fifth minute (9.8 vs. 9.5 scores, $p = 0.001$) greater than the neonates of ECS mother. They demonstrated the percentages of presence of meconium stain in amniotic fluid (MSAF) and presence of cord accident higher than neonate of CS mother (5.3% vs. 2.5%, $p = 0.002$, and 16.9% vs. 2.5%, $p = 0.001$, respectively).

Conclusion: The neonates of ECS mother had a greater weight and a higher risk for pulmonary problems. The neonates of SVD mother have a higher risk for MSAF, cord accident, and meconium aspiration. It reflected the need for prolong process of labor and delivery prevention.

Keywords: Elective Cesarean section (ECS), Spontaneous vaginal delivery (SVD), Maternal factors, Neonatal outcomes

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