Objective
To estimate the association of fetal head position prior to vacuum extraction (VE) and pregnancy outcome.

Methods
A retrospective cohort study of singleton pregnancies who underwent VE. Pregnancy outcome of occipito-anterior (OA) position of the fetal head was compared to those with occipito-posterior (OP) position.

Results
Amongst overall 12,063 deliveries, there were 1,118 (9.2%) VE deliveries. Of them, 871 (77.9%) had OA and 247 (22.1%) had OP position of the fetal head. Except for a higher rate of nulliparity in the OA group, no significant differences between the groups regarding pregnancy complications, induction of labor and birthweight were noted. In the OP group, there were higher rates of prolonged 2nd-stage of labor as an indication for VE (49.8 vs. 36.5%, p<0.001) and single detachment of vacuum cup (11.3 vs. 6.7%, p=0.02) without any increased risk of failed extraction. Higher risks for sub-galeal hematoma (aOR=4.36, p=0.03) and low 5-minutes-Apgar score (aOR=4.63, p=0.02) were observed in the OP group with otherwise similar rates of adverse maternal and neonatal outcomes.

Conclusion
Among women undergoing VE, OP position is associated with higher rate of vacuum cup detachment, low 5-minutes-Apgar score and increased risk for sub-galeal hematoma with otherwise similar rates of adverse maternal and neonatal outcomes.