A short decision-to-delivery interval for category 1 caesarean sections does not correlate to an improved neonatal outcome

Henrik Jörnvall[1,2], Hanna Landin[2], Anna Tapper[1,2]
[1]PMI, Karolinska University Hospital, [2]Department of Physiology and Pharmacology (FyFa), Karolinska Institutet

Introduction

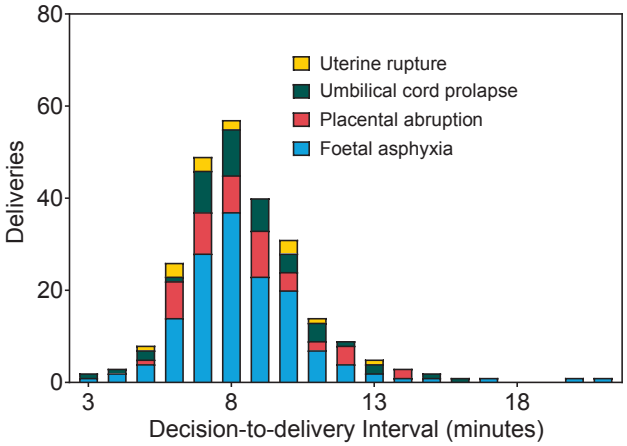
A category 1 caesarean section is performed when the foetus' or mother's life is in immediate danger. A decision-to-delivery interval (DDI) of maximum 30 minutes for category 1 caesareans is recommended by many professional associations, although current evidence fail to correlate a short DDI to improved neonatal outcome. Furthermore, several studies have demonstrated the difficulty to consistently achieve a DDI of less than 30 minutes during category 1 caesarean sections. The aim of the present study was to investigate the feasibility of a consistent DDI of less than 30 minutes, and to correlate a short DDI to improved neonatal outcome.

Materials and methods

345 Category 1 caesareans between February 25th 2008 and September 22nd 2016 were retrospectively identified from medical records, and 295 cases with available data could be included in the study. Neonatal outcome measures used were: Apgar score at 5 minutes; umbilical cord pH and base excess; and admission to neonatal care unit. Data was analysed using Mann-Whitney U test, χ^2-test, ANOVA, and logistic regression.

Results

The median DDI was 8 minutes with a range of 3-21 minutes. Short DDI was found to correlate to an umbilical cord arterial pH < 7.0 (p=0.027), showing a decreased risk of low pH with increasing DDI. No other correlations were found using logistic regression with DDI as the independent variable and BE < -12 mmol/l, Apgar 5 minutes < 7, or admission to neonatal care unit as dependent. Adjusting for gestational age and birth weight gave similar results.



	OR (95 % CI)	p-value
pH < 7.0	0.75 (0.59, 0.97)	0.027 *
Apgar 5 minutes < 7	1.07 (0.96, 1.19)	0.227

Conclusions

All category 1 caesarean sections identified had a decision-to-delivery interval (DDI) less than 30 minutes.
A short DDI as dictated by current recommendations could not be correlated to an improved neonatal outcome.

Further reading, Acknowledgement and Ethical permit

Tolcher, M. C., Johnson, R. L., El-Nashar, S. A. & West, C. P. Decision-to-incision time and neonatal outcomes: a systematic review and meta-analysis. Obstetrics and gynecology 123, 536-548 (2014)

The authors wishes to thank Drs Anil Gupta, Ylva Vladic Stjernholm, Yinghua Li, Gunnar Dahlgren and Jonas Tunelli for background information, data collection and valuable discussions.

The presented study is approved by the regional committee of ethics in Stockholm with reference 2016/2437-31/2.

Karolinska University Hospital
Perioperative medicine and intensive care, PMI
171 76 Stockholm, Sweden
Henrik Jörnvall
E-mail: henrik.jornvall@sll.se