



Vaginal Twin Deliveries: Delivery Time Interval (DTI) Analysis

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INTRODUCTION

The status of the second twin may be of concern during a vaginal delivery, and the twin delivery time interval (DTI) may be pertinent to this. There may be a relatively worse perinatal outcome of the second twin at vaginal delivery, possibly correlating to the DTI of those vaginally-delivered liveborn twins. Though at cesarean delivery, this interval is negligible, for a vaginal delivery there can be a considerable delay of delivery of Baby B (the second twin). The set of vaginal twin deliveries over the past couple of decades offers an ability to review the experience of our institution, possibly identifying guidelines as to the optimal inter-twin delay that may be best tolerated. This has been explored within the medical literature, but with no definitive conclusion. So, the authors sought to explore the dataset of this institution, contained in its Structured Query Language (SQL) perinatal database (PG Works), in order to possibly identify an answer to this question.

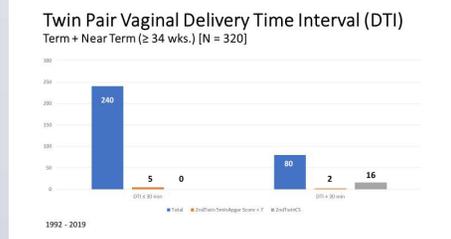
METHODS

A Structured Query Language (SQL) perinatal database was used to extract and analyze the perinatal data regarding all term and near term (≥ 34 weeks of gestation) liveborn vaginal twin deliveries, from January 1, 1992 through December 31, 2019. The data relating to the parity, birthweight, delivery time, Apgar scores, operative vaginal delivery procedures, Neonatal Care Unit Admissions (NICU), and need for a second cesarean delivery for the second twin were reviewed. Group A includes the twins for whom the DTI was ≤ 30 minutes, and Group B includes the twins for whom the DTI > 30 minutes. Analysis of the 5-Minute Apgar scores of these groups were calculated. A t-test statistical analysis was performed on the parametric data.

RESULTS

In our institution, 320 term and near term (≥ 34 weeks of gestation) vaginal liveborn twin births occurred from January 1, 1992 through December 31, 2019. In this same population, 240 babies delivered ≤ 30 minutes (DTI) as the second twin, while 80 delivered with a DTI > 30 minutes. Sixteen twins delivered by Cesarean (as the discordant 2nd twin). The average 5-minute Apgar of those second twins in Group A was 8.6, while the average 5-minute Apgar score of the 2nd twin in Group B was 8.6. In contrast, the average 5-Minute Apgar score of all near term/term twin vaginally delivered 1st twin babies in this same time period was 8.8. The number of nulliparous moms in this population was 119 (37%), with no significant difference in the nulliparous parturients between the A and B groups.

Considering the Group B second twins (those with a DTI of > 30 minutes), the average birthweight was 2631 grams, whereas for Group A, the average birthweight was 2494 grams. This 137-gram average birthweight twin discordancy was 5% of the A Group average birthweight. Of the 80 Group B second twins, 16 (20%) required a cesarean delivery.



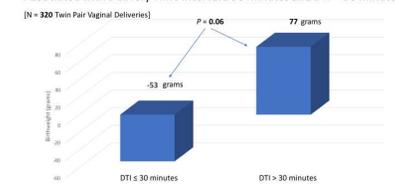
DISCUSSION

Twin Pair Vaginal Delivery Time Interval (DTI)
2nd Twin Average Birth Weight (grams)



This above graph may suggest an explanation for a delayed vaginal delivery of the 2nd twin, as does the graph below.

Average Twin Birthweight Difference (B - A)
Associated with Delivery Time Interval ≤ 30 minutes and DTI > 30 minutes



CONCLUSIONS

- Antepartum sonography may not be able to adequately identify a twin B estimated birth weight that may pose a risk of delayed vaginal delivery
- No perinatal harm was shown for 2nd born twin neonates with a Delivery Time Interval of > 30 minutes
- Most vaginally delivered twins are born in < 30 minutes
- A Delivery Time Interval > 30 minutes represents a **20%** risk of a needed cesarean delivery of the 2nd twin, rather than **5%** of the total cohort

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