


No Significant Difference Is Not Equivalence: Statistical Considerations on Phenylephrine Requirement in Left-Tilt versus Supine Cesarean Delivery [Response to Letter]

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Dear editor

We are pleased that Dr. Su Jiang et al have taken note of our recently published work¹ and provided some valuable comments on the study results.

The ED50 values for patients in a 15° left lateral tilt position and in the supine position were 0.33 µg/kg/min (95% confidence interval (CI) = 0.23–0.39 µg/kg/min) and 0.30 µg/kg/min (95% CI = 0.22–0.37 µg/kg/min), respectively. The 95% CI values of ED50 in these two groups were highly similar, suggesting that a 15° left lateral tilt position has no effect on the phenylephrine dose requirement. The relative median potency for phenylephrine in the left-tilt versus supine group was 1.06 (95% CI = 0.86–1.45), which was derived from probit analysis as a backup in the study. The 95% CI range in this study indicates two aspects. First, there is no significant difference between the two. Second, because of the small sample size in the up-and-down design, the accuracy of the estimation may be decreased. Moreover, due to individual differences among patients, the uncertainty of the estimation will also increase, leading to a wider interval. Nevertheless, the sample size in our study is adequate for the up-and-down method to determine the ED50 values, indicating that the primary outcome is robust. Moreover, the overlap between the 95% CIs in the two groups implies that a 15° left lateral tilt position has no impact on the phenylephrine dose requirement. Taking all the aforementioned factors into consideration, we do not consider that there is anything inappropriate with our conclusion “A 15° left tilt did not significantly alter phenylephrine requirements; therefore, routine use of tilt solely to reduce vasopressor need may not be necessary”. Figure 3 in our paper shows the dose–response curve derived from probit analysis as a backup.

In this study, we provide evidence that a 15° left lateral tilt position did not reduce the dose requirement of prophylactic phenylephrine. Our conclusion that “A 15° left tilt did not significantly alter phenylephrine requirements; therefore, routine use of tilt solely to reduce vasopressor need may not be necessary” is accurate according to the findings in this study. But we believed that large sample size and multi-centers studies to compare the supine position with the 15° left tilt position on the effect of maternal and neonatal outcomes are warranted and would further provide robust evidence of the advantages and disadvantages on different maternal position usies during cesarean delivery.

We apologize for the carelessness in the inconsistent editing of the analysis presented in Table 2 and method section. As Dr. Su Jiang et al have pointed out, the editing is unclear. In fact, we employed the “Fisher exact test” but erroneously indicated the “chi-square test” in the footnote of Table 2. We have checked the results of total phenylephrine, and it presented as median and range. We sincerely express our appreciation for their detailed feedback.

Finally, thanks to Dr. Su Jiang et al for their attention to our work and their appreciation of our skeptical spirit, despite the fact that there have always been controversial reports^{2–4} regarding the advantages of “15° left tilt” in obstetric clinical anesthesia.



Disclosure

The authors report no conflicts of interest in this communication.

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