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CAT Block 7

**Reference:** Hanson, Amy et al. (August, 2016) A Randomized Controlled Trial of Positioning for Lumbar Puncture in Young Infants. *Pediatric Emergency Care* 32(8):504-507.

**Question:** Does certain positioning (lateral recumbent vs seated position) for lumbar puncture provide better results and less complications in infants?

**Objective:** The lateral and sitting positions are those most widely used to perform lumbar puncture (LP) in infants. This study sought to compare LP success rates by position. Secondary outcomes were successful LP on the first attempt and rates of procedural complications.

**Methods:** The study was comprised of infants aged 1 to 90 days undergoing LP in their pediatric emergency between June 1, 2012 and October 31, 2013. The patients were randomized to 1 position or the other. Successful LP was defined as collection of cerebrospinal fluid with a red blood cell count of less than 10,000 cells/mm<sup>3</sup> on either of the first 2 attempts. Electronic medical records were reviewed for patient information, cerebrospinal fluid results, and procedural complications. Providers completed a questionnaire detailing their previous LP experience and technique. Primary results were analyzed using the intention-to-treat principle.

**Results:** There were a total of 168 infants enrolled in the study. Of 167 with data eligible for analysis, 82 (49%) were randomized to the lateral position. There was no statistically significant difference in LP success rate between the lateral (77%, 63/82) and sitting (72%, 61/85) positions (difference, 5.1%; 95% confidence interval, -8.2%–18.3%). There were no significant differences in success on the first LP attempt or the rates of procedural complications.

**Conclusions:** Among infants 1 to 90 days of age, this study found no difference in LP success between the lateral and sitting positions.

**Limitations:** I believe limitations to this study were that it took place at a pediatric emergency medicine facility where the physicians were more used to performing lumbar punctures on the infant population and had nurses who were trained to hold the patient in certain positions for the lumbar puncture. It would be interesting to see the statistics for the traditionally trained emergency medicine physician's 1<sup>st</sup> attempt success rates with the position that they typically perform lumbar punctures with vs the position that is atypical for them.

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