SUMMARY

Güler F. The effect of positioning on adapting to spontaneous breathing in premature infants after weaning from mechanical ventilation.

This randomized controlled experimental study was performed to determine effects of positioning on adaptation to spontaneous breathing in premature infants after weaning from mechanical ventilation.

Data were collected from randomly selected 60 infants with premature birth weight in the Neonatal Intensive Care Unit in Research and Practice Hospital of Adnan Menderes University from December 2012 to December 2013. Of 60 premature infants, 30 were assigned into the study group and 30 into the control group. Data were collected with a data collection form for newborns. The study group had the prone position and the control group had the supine position for the first 120 minutes when spontaneous breathing started after weaning from the mechanical ventilation. The heart rate, SpO_2 and the respiration rate were recorded at every 20 minute. The infants were also monitored in terms of respiratory distress symptoms, breathing rhythms and presence of apnea.

Obtained data were analyzed with descriptive statistics, Chi-square test, Student's t test, Mann-Whitney U test, single factor variance analysis for repeated measures and Friedman test. $p<0.007$ was considered significant in analyses of repeated measures and $p<0.05$ was considered significant in analyses made to compare independent groups. The parents of the infants included in the study were informed about the study and their written informed consent was obtained. Approval was also obtained from the head physicians of the hospitals and the ethical committee.

There were significant intragroup differences in the mean heart rate between repeated measures ($p<0.007$). This difference was found not be due to positioning ($p>0.007$).

The mean SpO_2 was higher in the study group than in the control group, though not significant ($p>0.007$). This suggested that positioning did not have an influence on SpO_2. Four infants in each group developed desaturation (SpO_2;≤85%). Two infants in the control group failed to maintain spontaneous breathing and were put on mechanical ventilation again.

Although the study group had a significantly higher respiratory rate than the control group, the difference was not significant. Therefore, positioning was not found to affect the respiratory rate ($p>0.007$).

The results of the study revealed that positioning did not influence mean values of SpO_2, heart rate and respiratory rate, respiratory rhythms, presence of apnea and respiratory distress symptoms in premature infants after weaning from the mechanical ventilation.

The results of this study will help to increase nurses' awareness of the interventions used to increase adaptation of premature infants to spontaneous breathing after weaning from the mechanical ventilation in neonatal intensive care units and to design appropriate nursing interventions.

Key Words: Mechanical ventilation, Premature infant, Prone position, Spontaneous breathing, Supine position