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CONNECTION OF MODE OF VENTILATION AND DEVELOPMENT OF RETINOPATHY OF PREMATURITY IN LBW INFANTS

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**Background.** Treating low birth premature infants is associated with many complications. Prenatal corticosteroids and postnatal surfactant, as well as appropriate ventilation can reduce the long-term consequences.

We have attempted to link the development of retinopathy of prematurity (ROP) with some risk factors. We have investigated whether the use of corticosteroids, the INSURE and LISA application of surfactant and the mode of ventilation would affect the development of ROP.

**Methods.** The study included ventilated preterm infants up to 1500 grams in a one year period. Results. A total of 44 low birth weight infants were treated: 18% < 26 weeks, 27% from 26 to 28 weeks, 30% from 28 to 30, 16% from 30 to 32 and 9% from 32 to 34 weeks. 18% were born vaginally, 23% by planned and 59% by emergency Cesarean section. There were 66% boys and 34% girls. 25 % received Corticosteroids. All premature infants up to 26 weeks received surfactant and have been ventilated by invasive ventilation, with 13% by nCPAP. Laser photocoagulation was performed in 50%. In the 26 to 28 week group, LISA was performed in 50% and non-invasive ventilation was started, however it stopped and preterms were re-intubated and invasively ventilated. Laser photocoagulation was done in 8% of the preterm. Of preterm from 28 to 30 weeks, in 77% non-invasive ventilation was attempted (50% of them received surfactant by LISA, other 50% by INSURE). Non-invasive mechanical support was successful in 38%. Laser was needed for 1/3 of those. In preterm with 30 to 32 weeks, non-invasive mechanical support was attempted in 87% (50% received surfactant by LISA and 50% by INSURE). 14% had to be intubated and invasively ventilated. 28% of preterm infants had to be invasively ventilated.

Conclusion. The gentle methods of applying surfactant by LISA and INSURE, as well as non-invasive ventilation were effective in preterm of 28 and more weeks and reduced long-lasting complications. In smaller more immature infants these techniques can lead to unnecessary manipulation and expose the vulnerable patients at a higher risk of ROP.

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