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The effects of two different intravenous lipid emulsions on the outcomes of preterm infants with sepsis: a randomized controlled trial

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Objectives: Lipid emulsions play an important role in parenteral nutrition in preterm infants. We aimed to evaluate the effects of two different intravenous lipid emulsions on the outcomes of preterm infants with sepsis.

Methods: A randomized controlled pilot trial was conducted in the Neonatal Care Unit of Mansoura University Children's Hospital, Egypt during the period from February 2016 to February 2017. Forty preterm infants with clinically suspected sepsis were enrolled and assigned randomly into one of two groups, one received MOFS lipid emulsion (MOFS group) and the other received pure soy bean oil-based emulsion (S group). Clinical and epidemiological data were collected. Assessment was done on 1st day and 7th day post randomization including growth parameters, complete blood count, C-reactive protein, random blood glucose, serum creatinine, serum triglyceride, soluble intercellular adhesion molecule 1 and leukocyte integrin β 2. Between-groups and within-group differences were analyzed statistically.

Results: No statistically significant differences were detected between MOFS and S groups as regards growth parameters. Laboratory markers did not show any statistically significant difference between both groups except for leukocyte integrin β 2 and soluble intercellular adhesion molecule 1 being higher in MOFS group. No statistically significant differences were observed between both groups as regards duration of mechanical ventilation, duration of antibiotics treatment, mortality rate or use of inotropes. Shorter hospital stay was observed with S group.

Conclusions: Both MOFS and pure soybean oil-based lipid emulsions were equally safe, effective and well tolerated in septic preterm infants with limited differences between them.

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