PP-04. Olive oil as a potential prebiotic in infants' skin

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Aim

Preterm infants are particularly susceptible to infections due to incomplete skin development and the colonization of antibiotic resistant highly pathogenic microorganisms. Manipulation of the composition of the skin microbiota by olive oil application, may allow selective inhibition of detrimental and at the same time preservation and/or stimulation of beneficial-commensal bacteria. In this case–control study we aimed to investigate the effect of olive oil application to the skin flora colonization, during the first 2 weeks of life in very low birth weight (VLBW) infants.

Materials and methods

Thirty five VLBW preterm infants were randomized to receive either daily skin application of olive oil or routine skin care for the first two weeks of life. Total aerobic mesophilic microflora (AM), total anaerobic mesophilic microflora (ANM), Enterobacteriaceae, *Enterococcus* spp, *Staphylococcus* spp, fungi, yeast, and *Candida* spp were enumerated from three different sites of the infants' skin (axilla, peri/umbilical and anus), using plate count techniques.

Results

No differences in neonatal mortality or in the incidence rate of nosocomial infections were observed between the oil treated and controls. Umbilical AM was higher in infants treated with olive oil but this difference became statistically significant compared to control group, only after two weeks of treatment ($p = 0.01$), while no differences were observed in the other sites of the skin. ANM was higher in the oil treated group compared to control, at the first week ($p = 0.008$). *Enterococcus* spp counts were lower in the oil treated group at the end of the study ($p = 0.05$). Elevated populations of *Staphylococcus* spp. were measured in the axilla of infants treated with olive oil, but they were not different compared to the staphylococci of the control group. Concerning all the other microorganisms studied, there were no differences between oil treated and control infants.

Conclusions

Olive oil application to the skin seems to be well tolerated by the premature infants and may act as a prebiotic enhancing the commensal skin microbiota in VLBW infants.

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PP-05. Placental findings of intrauterine growth restricted infants

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Aim

Placenta is an important organ for fetal growth and development, and placental dysfunction has an impact on the health of an individual from prenatal life through older ages. Fetal growth depends on the interactions of genetic determinants with an environment of maternal, fetal, and placental influences. Intrauterine growth restriction (IUGR) is the failure to achieve the growth potential of the fetus. A common definition for IUGR is an estimated fetal weight less than the 10th percentile for gestational age. The causes of IUGR mostly are chromosomal abnormalities, infections, metabolic factors and placental disorders. In this study we aimed to compare the placental findings of IUGR infants with non-IUGR infants.

Materials and methods

Twenty four infants with IUGR born in Hacettepe University Hospital were included in this study. Gestational age matched 40 infants without IUGR, born in the same period of time, constituted the control group. Gestational ages, birth weights, prenatal histories, maternal disorders and both macroscopic and microscopic findings of placentas of all cases were recorded.

Results

Chronic histiocytic villitis-intervillositis of unknown etiology and villous infarct were found to be more common in the placenta of infants with IUGR compared to the control group. However, acute chorioamnionitis was more common in the non-IUGR group. Only one placenta was defined as having no pathological diagnosis (1/24, 4%) in the IUGR group, while 12 of the 40 placentas (30%) were defined as having no pathological diagnosis in the control group.

Conclusions

These findings show that normal placental perfusion is important for fetal growth. The results of the study show that chronic inflammatory processes such as histiocytic villitis-intervillositis seem to be associated with IUGR, whereas acute chorioamnionitis does not.

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PP-06. Early noninvasive ventilation versus synchronized intermittent mandatory ventilation in very low birth weight infants with compartment syndrome: A single-center experience of 61 cases

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Aim

This study aims to evaluate the feasibility of conducting a prospective, randomized trial comparing early noninvasive ventilation (NIV) to synchronized intermittent mandatory ventilation (SIMV) in very low birth weight (VLBW) premature infants. This pilot study evaluated two ventilator management protocols to determine how well they could be implemented in Vinnitsa Region Clinical Children Hospital. Although this pilot study was not powered to detect differences in outcome, we also collected outcome data.