European Respiratory Society
Annual Congress 2013

Abstract Number: 565
Publication Number: P2056

Abstract Group: 7.5. Neonatology and Paediatric Intensive Care
Keyword 1: Chronic disease **Keyword 2:** Neonates **Keyword 3:** Nitric oxide

Title: L-arginine for chronic lung disease (CLD) in preterm neonates

Dr. Elena 3612 Polycarpou epolycarpou@yahoo.com MD [1], Dr. Sophia 3613 Zachaki szachaki@gmail.com [2], Mr. Nicodemos 3614 Polycarpou nicpol7@gmail.com MD [3], Dr. Stavroula 3615 Gavrili szachaki@gmail.com MD [1] and Dr. Christos 3616 Kostalos ccostalos@yahoo.gr MD [1]. [1] Neonatal Intensive Care Unit, General District Hospital Alexandra, Athens, Greece ; [2] Health Physics & Environmental Health Laboratory, NCSR "Demokritos", Athens, Greece and [3] Radiology Department, Children's Hospital Agia Sophia, Athens, Greece .

Body: Introduction: Chronic lung disease (CLD) is the major cause of morbidity and mortality in very low birth weight infants (VLBW,≤1500gr). CLD is characterized by arrested lung development and abnormalities in the pulmonary vascular bed. An important regulator of vascular perfusion is endothelial nitric oxide (NO). NO is synthesized from the amino acid L-arginine. A relative arginine deficiency or immaturity of NOS activity in premature infants may lead to deficient tissue NO levels, vasoconstriction and ischemia reperfusion injury and may predispose to CLD. Purpose: To investigate the effect of arginine supplementation on the incidence of CLD and on the survival without CLD in VLBW infants. Material: 74 VLBW neonates with birth weight ≤1,500gr and gestational age ≤32 weeks. Methods: 32 neonates were randomly assigned to receive oral L-arginine supplementation of 1.5 mmol/kg/day with feeds, between 3rd and 28th day of life, while 42 neonates received placebo. Infants who continued to require oxygen support or died by 28th day of life were considered to have CLD. Results: No adverse effects of oral arginine supplementation were noted. No significant differences in birth weight, gestational age, Apgar scores and antenatal steroid administration were noted between the groups. 11 out of 32 (34.4%) neonates had CLD in the arginine group whereas 21 out of 42 (50.0%) neonates had CLD in the control group, but this was not statistically significant (p=0.139). The survival without CLD was significantly higher in the arginine as compared to the control group (66% vs 43%, p=0.052). Conclusion: Oral L-arginine supplementation is safe and easy to administer and is likely to improve the survival without CLD in VLBW infants.