European Respiratory Society
Annual Congress 2012

Abstract Number: 168
Publication Number: P1936

Abstract Group: 7.2. Paediatric Asthma and Allergy
Keyword 1: Allergy **Keyword 2:** Environment **Keyword 3:** Neonates

Title: Influence of farm exposure and pets ownership during pregnancy on cord blood mononuclear cells (CBMC) with intracellular production of interferon (IFN)-γ

Prof. Sergey 32 Tereshchenko legise@mail.ru [1], Dr. Ivan 33 Novitzkiy legise@mail.ru [1] and Dr. Lyudmila 34 Vasilieva legise@mail.ru MD [1]. [1] Siberian Division of Russian Academy of Medical Sciences, Medical Research Institute for Northern Problems, Krasnoyarsk, Russian Federation, 660022 .

Body: Some epidemiological and observational data suggest that farm and pets exposure in early childhood may be conducive to reduced atopy. Currently, there is a lack of consensus regarding underlying immunological mechanisms, especially in prenatal period. AIM: We hypothesized the influence of farm exposure and pets ownership during pregnancy on intracellular IFN-γ production by CBMC. METHODS: Intracellular IFN-γ expressions as well as early activation marker CD69 (absolute cells count) were examined using flow cytometry after PHA stimulation of CBMC obtained from 93 full-term newborns. The Kruskal-Wallis and Mann–Whitney tests were used. RESULTS: We revealed that newborns from rural mothers (n=14) have higher amount of both nonactivated (INFγ+/CD69–, p=0.02) and activated (INFγ+/CD69+, p=0.028) CBMC, producing IFN-γ, as compared with newborns from urban mothers (n=79). Only for newborns from urban mothers we calculated the influence of pets exposure during pregnancy on intracellular IFN-γ production (Fig. 1).

Noteworthily, that only amount of activated (INFγ+/CD69+) CBMC was elevated in dog (but not in cat) exposure group. CONCLUSION: Thus, external and home environment factors such as farm exposure and dog ownership may act prenatal affecting Th1/Th2 balance. These findings can leastwise partially explain previously reported epidemiological data.