

## BRONCHOALVEOLAR LAVAGE FLUID CYTOKINE AND CHEMOKINE PROFILES IN VENTILATED PRETERM INFANTS

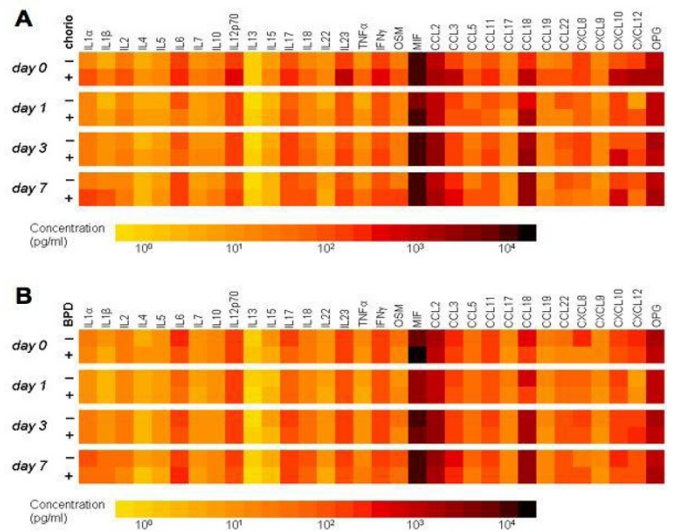
J.V. Been<sup>1</sup>, J.F. van Iwaarden<sup>1</sup>, W. de Jager<sup>2</sup>,  
A. Debeer<sup>3</sup>, L.J. Zimmermann<sup>1</sup>

<sup>1</sup>Paediatrics, Maastricht University Medical Centre, Maastricht, <sup>2</sup>Paediatric Immunology, University Medical Center Utrecht, Utrecht, The Netherlands, <sup>3</sup>Neonatology, University Hospital "Gasthuisberg, Leuven, Belgium

**Background and aims:** Pulmonary inflammation is historically regarded a key element of the pathophysiology of bronchopulmonary dysplasia (BPD). We aimed to determine the temporal cytokine and chemokine patterns in bronchoalveolar lavage fluid (BALF) from ventilated preterm infants in the first postnatal week. Associations with exposure to chorioamnionitis and development of BPD were determined.

**Methods:** BALF was collected in ventilated preterm infants ( $\leq 32$  wks) on days 0, 1, 3 and 7. Using multiplex immunoassay, individual levels of 32 inflammatory mediators were quantified in each sample.

**Results:** 93 BALF samples were obtained from 59 infants. Levels were within the detection range for the vast majority of mediators and samples. Histological chorioamnionitis was associated with significantly increased BALF cytokine and chemokine levels, most prominently so on day 0 (Figure 1A). IL-10, TNF- $\alpha$ , IL-1 $\alpha$ , and IL-1 $\beta$  had the highest predictive ability for chorioamnionitis on day 0 (area under ROC curve  $>0.90$ ;  $p < .01$ ). Increased cytokine and chemokine levels were not predictive of BPD development (Figure 1B). In contrast, BPD was associated with significantly decreased levels of several chemokines during the first postnatal week (CCL5, -19 and -22, CXCL8, and MIF (all  $p < .05$ )).



**Figure 1.** Bronchoalveolar lavage fluid cytokine and chemokine profiles according to antenatal exposure to chorioamnionitis (A) or subsequent development of BPD (B).

[Figure 1]

**Conclusions:** BPD was not preceded by increased pulmonary levels of inflammatory mediators during the first postnatal week in preterm infants. This is in accordance with the concept of 'new BPD' characterised by lung developmental arrest rather than lung injury and inflammation.

## 12

### HYPERTENSION, DIABETES AND OVERWEIGHT: LOOMING LEGACIES OF THE BIAFRAN FAMINE

M. Hult<sup>1</sup>, P. Tornhammar<sup>1</sup>, P. Ueda<sup>1</sup>, C. Chima<sup>2</sup>,  
A.-K. Edstedt Bonamy<sup>3</sup>, B. Ozumba<sup>2</sup>, M. Norman<sup>1</sup>

<sup>1</sup>Department of Clinical Science, Intervention and Technology (CLINTEC), Karolinska Institute, Stockholm, Sweden, <sup>2</sup>University of Nigeria Teaching Hospital, Enugu, Nigeria, <sup>3</sup>Department of Woman and Child Health, Karolinska Institute, Stockholm, Sweden

**Objective:** To study the risks for hypertension, glucose intolerance and overweight forty years after fetal or childhood exposure to famine afflicting Biafra during the Nigerian civil war (1967-1970).

**Design:** Prospective cohort study performed in June 27 - July 31, 2009.

**Setting:** Enugu, Nigeria. **Participants:** Adults (n=1,339) born before (1965-67), during (1968-January 1970), or after (1971-73) the years of famine.