

## **Evaluation of Inflammation in Bronchopulmonary Disease with Transcutaneous Carboxihemoglobin Measurement- Preliminary Results**

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### **Background and Aims**

Bronchopulmonary dysplasia (BPD) is an important chronic respiratory morbidity of premature infants. Increased carboxyhemoglobin (COHb) levels have been reported for chronic obstructive pulmonary disease, systemic inflammatory response syndrome and acute respiratory distress syndrome and also for mortality in premature infants. COHb levels increases as a result of oxidative stress and inflammation. Changes of COHb levels by the measurement of transcutaneous COHb levels may be informative for continuing inflammation levels of BPD. We aimed to evaluate inflammatory process in BPD with transcutaneous COHb.

### **Methods**

Twenty premature infants discharged from Ege University NICU with the diagnosis of BPD (Group 1), 20 premature infant without BPD (Group 2), 20 term healthy control (Group 3) infant were included in the study. Transcutaneous COHb levels were measured with Masimo radical set device following three months after discharge. Antenatal and neonatal characteristics of infants were recorded.

### **Results**

Mean transcutaneous COHb levels were significantly higher in group 1 than group 2 ( $p=0.000$ ) at postnatal age 0. Mean SpCO values after first three months of discharge were higher in group 1 than group 2 ( $p<0.05$ ) and group 3 ( $p<0.001$ ). No difference was detected in the same groups' (Group 1 and 2) consequent measurements of SpCO.

### **Conclusion**

Our data support the ongoing persistent chronic inflammatory process after discharge in infants with BPD. The long term multisystemic morbidity, inflammatory mass could be minimized with early diagnosis and preventive treatments. Further investigations are needed in larger populations for early prediction of BPD among the risk group.