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SCILD Swiss CF Infant Lung Development
BILD Cohort Basel Bern Infant Lung Development Cohort

Low exhaled nitric oxide in infants with cystic fibrosis

Background information and aim: Exhaled nitric oxid (FeNO) is a biomarker that can be measured during tidal breathing. Low FeNO values can have a negative effect on defense mechanisms and play a role in the acquisition of infections. In older patients with cystic fibrosis (CF), low FeNO values were reported in various studies. However, it is unclear if this is a result of chronic disease or if FeNO is already low early in life due to the underlying genetic disorder (of the so called CFTR Protein) in CF.

Measurements: In 34 infants with CF (out of the SCILD cohort) and 68 healthy controls (out of the BILD cohort) between 4 and 12 weeks of age, FeNO was measured during expiration and natural sleep. The measurements were conducted before the children had their first respiratory tract infection.

Results: We could show that FeNO was lower in infants with CF than in healthy controls. Additionally CF infants without any CFTR protein residual function had lower FeNO values than those with remaining CFTR protein function. Our results show that low FeNO is probably associated with CFTR dysfunction and does not only appear in later chronic stages of the disease. Maybe at some point, low FeNO values could be used to see if CFTR modulation medication is effective.

Publication: Lower exhaled nitric oxide in infants with cystic fibrosis compared to healthy controls. Korten et al., Journal of Cystic Fibrosis 2017

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