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Resveratrol Improves Chloride Secretion in CF Mice Homozygous For the F508del Mutation


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Introduction: Resveratrol is a polyphenol found in red wine that possesses a wide range of biological effects and has anti-oxidant properties. All these biological effects are related to NF-κB pathway which it is thought to be dysregulated in CF patients secondary to CFTR dysfunction.

Aim: To investigate the potential impact of resveratrol on CFTR function in CF mice.

Methods: Three weeks apart, nasal potential difference measurements (NPD) were performed in 5 CF mice homozygous for the F508del-CFTR mutation in the 129/FVB outbred background a) without treatment (baseline) and b) After intra-peritoneal injection of resveratrol (20mg/Kg) diluted in physiological serum. Normal distribution of NPD measurements was confirmed by Shapiro test. Between-groups comparisons were evaluated using paired ANOVA coupled to t test.

Results: Total chloride secretion improved from 4.8± 3.5 mV (baseline) to 11.7 ± 3.4 mV (Resveratrol) (P=0.015). Maximal baseline PD and response to amiloride were not modified.

Conclusion: Total chloride secretion improved with resveratrol. These preliminary data prompt us to further study the potential effect of resveratrol in cystic fibrosis.