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Journal club

VX-770, a CFTR potentiator, may have a potential clinical benefit in a subgroup of people with cystic fibrosis

Cystic fibrosis (CF) is caused by mutations in the gene encoding the CFTR (CF transmembrane conductance regulator) protein, an epithelial ion channel. Some mutations, of which the G551D mutation is the most common (occurring in approximately 5% of people with CF), permit the defective CFTR protein to reach the epithelial cell surface. VX-770, a CFTR potentiator, has been shown to increase the activity of defective cell-surface CFTR in vitro. In this small, randomised, double-blinded study, the effects of oral VX-770 in adults with CF and at least one G551D-*CFTR* allele were evaluated. CFTR ion-channel function was assessed by measuring nasal potential difference and sweat chloride concentration.

At day 28, in the VX-770 150 mg group (n=8), changes in sweat chloride concentration from baseline were significant for within-subject comparisons and versus placebo (n=4). Significant within-subject changes from baseline in nasal potential difference and FEV_1 were demonstrated. However, both these changes lacked significance when compared with the placebo group. No subject withdrew from the study.

This study demonstrated significant within-subject differences in CFTR and lung function. However, significant improvements were not demonstrated in comparisons between the treatment and placebo groups. The results of this study should be interpreted with caution in view of the small size of the groups involved. Further research into the potential clinical benefit of CFTR potentiators is required.

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Sneh Shah

Correspondence to Sneh Shah, ACCS CT1, Croydon University Hospital, 530 London Road, Croydon CR7 7YE, UK; sneh.shah@doctors.net.uk

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