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An 18 (+/-6) month follow up study of cognitive function in adults with cystic fibrosis related diabetes (CFRD)

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Introduction and Objectives: Cognitive impairments have been observed in people with type 1 and 2 diabetes. People with cystic fibrosis (CF) who have developed CF related diabetes (CFRD) also show some degree of impairment relative to healthy controls. The aim of this study was to examine cognitive function in people with CFRD after an 18 (+/-6) month period to assess any change in performance.

Methods: Adult (>16 years old), pancreatic insufficient patients with insulin treated CFRD registered to a large UK CF unit who had adequate verbal and written English were eligible. Cognitive performance was assessed using parallel versions of tests from the Cambridge Neuropsychological Test Automated Battery (CANTAB). Subjective ratings of sleep, stress, mood, cognitive performance and minor daily cognitive errors were also collected. At baseline, 67 people were tested; 49 non transplanted, 18 post transplantation patients. Twelve patients were lost to follow-up. To date, 43 people have been retested after an 18 (+/-6) month period; 35 non-transplanted, 8 post transplantation patients.

Results: Performance was similar at baseline and follow up on tests of motor function, visual memory and new learning, immediate pattern recognition, working memory and mental flexibility. On tests of immediate and delayed verbal memory, delayed pattern recognition and processing speed, performance had significantly improved at follow up. At follow up, blood glucose levels during testing were significantly lower (reflecting better glycaemic control in some patients) and people reported significantly less minor daily cognitive errors within the past 6 months.

Conclusion: Cognitive function is impaired in people with CFRD but remains stable over an 18 (+/-6) month period. Deficits in cognitive performance may impact upon quality of life and ability to adhere to treatment.