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IMPROVEMENT IN PEDIATRIC AUTOIMMUNE NEUROPSYCHIATRIC DISORDERS ASSOCIATED WITH STREPTOCOCCAL INFECTIONS (PANDAS) SYNDROME FOLLOWING TREATMENT WITH A COMBINATION OF ANTIBIOTICS AND FECAL MICROBIOTA TRANSPLANTATION (FMT)

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Introduction

Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal Infections (PANDAS) syndrome is a condition that impairs normal neurological brain function and is triggered by a streptococcal infection. It is characterised by an obsessive-compulsive disorder (OCD), tic disorder, or both and usually occurs suddenly between the age of 3-12 years. Other symptoms include mood changes, anxiety, attention deficit/hyperactivity disorder, trouble sleeping, and joint pain. Metagenomic profiles of those with PANDAS syndrome show an altered gut bacterial community. Commonly treatment involves antibiotics for streptococcal infection. Here, we report on the effects of fecal microbiota transplantation (FMT) in a set of identical twins with concomitant PANDAS syndrome.

Methods

Case 1: A male (16yrs) presented with slow transit type constipation with a colonic transit half clearance time of 70minutes. His medical history also included PANDAS syndrome and he later tested positive for *Clostridium Difficile* (*C. difficile*). The patient was treated with metronidazole before receiving a single dose of FMT which was transfused colonoscopically. At 1-month the patient tested negative for *C. difficile*. Post treatment he reported significant improvement in abdominal pain, bloating and constipation that lasted 2 years. Simultaneously, he reported symptom improvement in anxiety, depression, and Rheumatoid Arthritis which are associated with PANDAS syndrome.

Case 2: A male (16yrs) presented with severe constipation with a normal colonic transit half clearance time of 50minutes. Constipation prompted a worsening of symptoms of concomitant PANDAS syndrome which had previously been treated with steroids. After further testing he was found to have *C. difficile* for which he was prescribed metronidazole and vancomycin before receiving a single dose of FMT by colonoscopic infusion. At 1-month post treatment eradication of *C. difficile* was confirmed. Post treatment he reported experiencing improvement in constipation, diarrhoea, flatulence, and vomiting which lasted for 2 years. He also reported symptom improvement in Autism, OCD, and Rheumatoid Arthritis which are linked to PANDAS syndrome.

Discussion

To the best of our knowledge these are the first cases of improvement in PANDAS symptoms after FMT treatment. Further study is required into the effects of FMT on PANDAS syndrome before FMT can be confirmed as a potential treatment.

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