
Letter to the Editor

THE FUTURE of FECAL MICROBIOTA TRANSPLANTATION METHOD in NEUROPSYCHIATRIC DISORDERS

Dear Editor,

All microorganisms living in the body along with their respective genetic material is called a microbiome; furthermore the community of microorganisms that are present in different ecosystems of the human body is called microbiota (i.e. Gut microbiota, skin microbiota) (Evrensel and Ceylan 2015a). The microbiota-gut-brain axis and fecal microbiota transplantation (FMT) has been the focus of attention of the scientific community in recent years. Ninety percent of microbiota-themed articles have been published in recent years (Khanna and Tosh 2014). FMT is the process of transferring stool from a healthy donor to a receiver's gut in order to recover the impaired intestinal flora (Xu et al. 2015).

FMT dates back 1700 years when the first known stool application for treatment was performed by Chinese physician Ge Hong in the fourth century (Zhang et al. 2012). It has been used orally under the name of "yellow soup" in cases with severe diarrhea. This forgotten treatment method has recently been put into use again in the last fifty years. It was implemented in 1958 for the first time in modern medicine.

Furthermore a pseudomembranous enterocolitis case with severe diarrhea related to antibiotics was treated through a fecal enema (Eiseman et al. 1958).

Interest in the topic of microbiota-gut-brain axis and FMT is rapidly growing. New evidence is being obtained in the etiopathogenesis of neuropsychiatry disorders. There are numerous amounts of experimental and clinical research in the area of gut-brain axis (Evrensel and Ceylan 2015a), but information about FMT is limited. Despite this, initial results are promising. FMT is commonly used in the treatment of gastrointestinal diseases such as *Clostridium difficile* infection, Crohn's disease and ulcerative colitis. FMT is also being tested in the treatment of metabolic and autoimmune diseases. There are case reports indicating the effectiveness of FMT in the treatment of autism, Parkinson's disease, multiple sclerosis, chronic fatigue syndrome, and irritable bowel syndrome (Xu et al. 2015). FMT is easy to implement as well as a cheap and reliable treatment method, but long-term risks are unknown. Furthermore, standard implementation ways have not yet been established.

Although FMT dates back 1700 years, modern medical experiences have been obtained in recent years. In which disorder and direction microbiota balance is impaired, whether the transplant material should be obtained from a donor or be produced in the culture, whether fresh feces should be used or taken from a stool bank, what the stool should be diluted with, which dilution material should be used in different indications, the quantity of the stool to be used, which method should be used for application, the immunologic response emerging/changing after FMT, and whether FMT has long-term risks are all among the questions to be answered

(Vandenplas et al. 2015). In the future, oral application of FMT in the form of capsules to regulate intestinal microbiota is expected to become a routine procedure following antibiotic therapy (Borody et al. 2014). The ideal approach shall be to repair the microbiota with probiotics (Evrensel and Ceylan 2015b)

In the coming period, the determination of the means of FMT implementation and strong evidence with case samples demonstrating its effectiveness in neuropsychiatric disorders are needed.

Yours sincerely,

Alper Evrensel, Assist. Prof., Psychiatry Specialist, Department of Electroneurophysiology, Uskudar University, Istanbul. Turkey.

Mehmet Emin Ceylan, Prof., Psychiatry Specialist, Pharmacology Specialist, Department of Psychology, Uskudar University, Istanbul. Turkey.

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