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AUTISM WITH THE PERSPECTIVE OF MICROBIOTA GUT BRAIN AXIS

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Aim: This review aimed to explain the relationship between autism etiology and pathogenesis with gut microbiota and bidirectional communication of the gut and brain, called as gut brain axis. Autism spectrum disorder (ASD) is a neurodevelopment disorder that mainly characterized by three impaired skills: language and communication, learning, social and also was seen repetitive and restrictive behaviors. Prevalence of autism was reported as 1 in 59 children in the USA by CDC. Etiology and pathogenesis of the ASD have been associated with the conclusion of the disturbence of the gut microbiota (dysbiosis) and gut brain axis (GBA).

Material & Methods: Human microbiota consisted of 10^{12} bacteria, including 1000-35000 different Genuses. Gut microbiota are one of the most important part of the human microbiota. Gut microbiota and their products acting as conducter in the orchestra of immune-neuroendocrin, neuronal and metabolic communication. Gut and microbiota named as entero brain, second brain. A cross-talk and bidirectional communication exists between gut microbiota and the brain. This bidirectional pathway named as Microbiota gut brain axis. Evidences suggest that microbiota GBA is involved in a variety of the diseases such as: metabolic disorders (obesity, metabolic syndrome and diabetes), Functional gastrointestinal disorders (IBS), addiction (alcohol dependence), neurodevelopmental disorders (autism, schizophrenia), neurodegenerative disorders (Multiple sclerosis, Alzheimer's, and Parkinson), and stress (depression and anxiety. Interactions between autism and the microbiota GBA may be divided main four pathways and mechanisms: metabolic, neuroendocrine, neural and immune. Dysbiosis plays an important role (direct or indirect) triggering all the mentioned four pathways and mechanisms for developing autism.

Results: Recent strong evidences and investigations showed that etiology of the autism is consistently associated with altered microbiota and GBA.

Conclusions: Treatment strategies of the autism should be revised and medical approach should be considered and combined with applied behavior analysis (ABA).

Biography

Recep Kesli is working as Professor at Selcuk University, School of Medicine, Department of Medical Microbiology. He has published book, wrote chapters in national and international books. He has attended many international congresses and symposiums (more than fourty) presented many abstracts (more than one hundred and fifty) and also presented many speeches. He also has published many articles in international SCI/SCIE and national journals (more than seventy). He has h-index 10. He has many editorial duties as Editor in-Chief, Associate Editor and Editorial Board Member in different international journals. He has received two scientific awards (one international and the other one is national). He has completed more than 20 scientific reserach and RD projects. His area of research interest includes: molecular microbiology, Hepattis C virus, *Helicobacter pylori*, anaerobic bacteria, *Brucella spp*, microbiota and Autism spectrum disorder (Autism with the perspective of microbiota gut brain axis).

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