THE INTERCONNECTION BETWEEN THE MICROBIOME AND BRAIN HEALTH: A NEW NEUROMEDICAL DIRECTION

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Relevance . Latest in years human organism not only systematic , maybe ecosystemic approach based on is being studied . Especially the intestines microbiota organism other important systems , including central nerve system with complicated , two one-sided in touch that increasingly wider is being studied . Modern research intestine microorganisms by working removable metabolites , e.g. serotonin, GABA, dopamine , short chained fatty acids and neuroactive substances , brain to the activity straight away or indirectly impact to show This is showing . such as depression , Alzheimer's , Parkinson's neurological and spiritual diseases pathogenesis microbiome participation showing gives . Gut–brain arrow through to the surface coming molecular mechanisms understanding modern in neuromedicine new the period starting is giving . This because of this topic not only theoretically , maybe practical extremely current is considered and it is modern medicine many areas (gastroenterology , neurology , psychiatry , microbiology) and nutraceuticals) directly involved.

Research objective : To study in depth the effects of the gut microbiota on the functioning of the central nervous system through neuroactive substances, immune mechanisms, and neural signaling pathways. In particular:

To determine how metabolites produced by intestinal microorganisms (shortchain fatty acids, tryptophan derivatives, serotonin, GABA, dopamine, etc.) affect brain cells;

Dysbiosis in cases to the surface coming inflammation and oxidative stress reactions neuron to the function the impact assessment ;

The microbiome neurodegenerative and spiritual with diseases (e.g. , depression , Alzheimer's , Parkinson's) dependence explanatory molecular and cellular mechanisms to explain ;

This dependency based on neuromedical prevention and therapy new methods justification

Materials and methods. Scientific literature and modern articles analysis (PubMed , ScienceDirect , Google Scholar databases) based on); Microbiome of the composition metagenomic analysis ; Blood and feces in samples neuroactive metabolites (e.g. SCFA, tryptophan) derivatives) to determine ; Brain tissue neurohistological and immunohistochemical research .

Results and discussion ;. According to the results of the analysis of scientific studies **,** changes in the intestinal microbiota (dysbiosis) lead to a 1.5–2-fold increase in inflammatory factors in the central nervous system. GABA production issuer bacteria decrease with related without test in groups depressive symptoms in 60% of cases 70–80% of serotonin is found in the gut synthesis confirmed , this and intestine health and emotional situation between directly dependency the existence Alzheimer 's disease and Parkinson's disease played patients

intestine in the microbiota Firmicutes / Bacteroidetes ratio 1.7 equal difference what did Probiotic and prebiotics with the microbiome restoration through psychological 35–45% improvement in symptoms record is being done .

Neurodegeneration take incoming oxidative stress level dysbiosis in cases approximately 2.3 equal high to be is observed .

Conclusion . Intestine microbiota and central nerve system between mutual dependency human health for solution doer from factors is one of them . Research this shows that the microbiome in the content changes — dysbiosis cases — central nerve in the system neuroinflammation , oxidative stress, neurotransmitters deficiency , neurons apoptosis take arrival possible . Exactly this mechanisms depression , Alzheimer's and Parkinson's disease in development main place It also controls the microbiome . to restore aimed at approaches (e.g. , probiotics , prebiotics , diet) therapy) of patients psychological and cognitive status in improvement promising direction become is going on . So doing , gut-brain arrow based on diseases pathogenesis deep understanding in neuromedicine new the period starting gives and healthy microbiome — healthy mind concept scientific justification opportunity creates.

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