عنوان مقاله:

Effects of the Phytocompound Combination against Dysbiosis Induced by AGE-Rich High-fat Diet in Mice

محل انتشار:

مجله بین المللی آزمایشگاه پزشکی, دوره 10, شماره 2 (سال: 1402)

تعداد صفحات اصل مقاله: 9

نویسندگان:

فهیمه قنبری - *Department of Medical Genetics, International Campus, Shahid Sadoughi University of Medical Sciences, Yazd, Iran*

نوید عابدپور - *Department of Physiology, Medicinal Plants Research Center, Khorasgan Branch, Islamic Azad University, Isfahan, Iran*

مریم پیمانی - *Department of Biology, Faculty of Basic Sciences, Shahrekord Branch, Islamic Azad University, Shahrekord, Iran*

سیده لیلی اسدی یوسف آباد - *Department of Medical Genetics, Faculty of Medicine, Shahid Sadoughi University of Medical Sciences, Yazd, Iran*

مرضیه لطفی - *Department of Medical Genetics, Faculty of Medicine, Shahid Sadoughi University of Medical Sciences, Yazd, Iran*

محمدحسن شیخها - *Department of Medical Genetics, Faculty of Medicine, Shahid Sadoughi University of Medical Sciences, Yazd, Iran*

مهتا مظاهری - *Department of Medical Genetics, Faculty of Medicine, Shahid Sadoughi University of Medical Sciences, Yazd, Iran*

خلاصه مقاله:

Background and Aims: The composition of the Microbiota can be influenced by various lifestyle and environmental factors, including diet. We designed a study to investigate the improving effects of plant extract, the combination of turmeric, ginger, boswellia, and cat's claw on the abundance of key members of the gut microbiota, Bacteroidetes, Akkermansia muciniphila (A. muciniphila), Faecalibacterium prausnitzii (F. prausnitzii), Firmicutes and Bifidobacterium in mice treated with advanced glycation end products (AGE) rich high-fat diet (HFD). Materials and Methods: Eighteen ۲-month age male C۵۷BL/۶ mice were adopted to a regular diet for ۱ week and then fed with an HFD or regular diet. After ۸ weeks of diet, animals received plant extract concurrently with HFD for ۸ weeks. Stools were taken, DNA of stool samples was extracted, and qPCR of ۱۶s rDNA universal primers was performed. Then the effect of plant extract on dysbiosis induced by AGE-rich HFD was accessed. Results: Our results revealed the frequencies of Bacteroidetes (p=۰.۰۰۱), A. muciniphila (p= ۰.۰۰۰۵), F. prausnitzii (p<۰.۰۰۰۱), and Bifidobacterium (p= ۰.۰۰۰۸) were reduced, whereas the frequency of Firmicute was increased in the AGE-rich HFD group. A significant increase in the F/B ratio was observed in the HFD group than in the regular diet group (p= ۰.۰۰۰۳). plant extract reduced the F/B ratio and improved gut microbiota homeostasis. Conclusion: Plant extract restored gut microbiota patterns in HFD-treated mice. It seems

more studies are required to prove the application of plant extracts for modulating the gut microbiota as a promising new biomarker with potential for therapeutic applications.

کلمات کلیدی:

Advanced glycation end products, Bacteroidetes, Dysbiosis, Gastrointestinal microbiome, Plant extracts