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Short Communication

Shogaols as Epigenetic Compounds

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Abstract

The dramatic difference in human quality of life, health, and lifespan may depend not on the pool of inherited genes but their relative expression. Specific genes turned on to express related functions with others suppressed under the control mechanisms grouped under the term "epigenetics." The polyphenolic compound 6-Shogaol demonstrated significant potential in improving the clinical condition of MDS patients and is discussed as a possible epigenetic compound.

Keywords: *Shogaols; 6-Shogaol; MDS; BOS; ASXL 1 Gene; Epigenetics*

Introduction

In the gene and genome discovery studies, novel disease alleles (genes) occur in patients with specific clinical conditions. A function deletion in the ASXL1 gene has been found responsible for the mechanism in adult patients with myelodysplastic syndromes (MDS) [1]. The same ASXL1 malfunction in newborn children is responsible for the severe developmental disorder known as Bohring-Opitz syndrome (BOS) [1]. BOS results in an underdeveloped central nervous system with multiple organs and body system malfunctions. The ASXL1 deficiency in adults results in multilineage cytopenia, dysplasia, and characteristic features of human MDS.

Results

In a recently published preliminary clinical study, six patients with low to intermediate-1 MDS were administered the polyphenolic compound 6-Shogaol at a dose of 20 mg daily for 12 months. 6-Shogaol decreased serum ferritin levels in 3 of 6 patients with SF elevated at the study's baseline and upregulated the hormone hepcidin. The study demonstrated significant potential in improving the clinical condition of MDS patients by preventing iron overload and enhancing their quality of life, with no untoward effects in the course of the study [2-4].

Discussion

Given the above clinical finding in MDS patients receiving 6-Shogaol and the possible common denominator of the ASXL1 gene pathology underlying MDS and Bohring-Opitz syndrome, 6-Shogaol may be a game-changer in correcting ASXL1 gene pathology.

Conclusion

In vivo and ultimately, the human study can be applied to the hypothesis that 6-Shogaol may dose-dependently improve clinical manifestation, quality of life, and lifespan in patients with Bohring-Opitz syndrome and adults with the MDS, thereby revolutionizing patient care.

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