ISSN: 2688-8653

Advances in SGF Bone-Derived Factor Efficacy Research

Ruixi Feng

People's Country Peptide Group Co. LTD, Baoding, 071000, China.

Abstract

SGF Osteogenic Factor, also known as SGF Osteogenic Regeneration Factor, is a physiologically active peptide substance prepared from a special formulation of bovine collagen peptide, chondroitin, lacto-mineral salts and chitooligosaccharides. This paper reviews the main effects of SGF Osteogenic Factor in protecting bone health, osteoporosis, improving bone density and overall bone repair and regeneration, with a view to providing ideas for efficient basic research and clinical application of SGF Osteogenic Factor.

Keywords

SGF bone-derived factor; Efficacy.

1. Introduction

As the world's population ages, the prevalence of skeletal problems is increasing, posing a serious threat to the health of middle-aged and elderly people [1]. Current drugs for the treatment of systemic skeletal problems can be divided into three main categories based on their primary mechanism of action: drugs that inhibit bone resorption, drugs that promote bone formation and basic bone health supplements. As an essential bone health supplement, SGF Bone Source Factor has been found to play a role in the prevention and treatment of comprehensive bone repair and regeneration. It is made from animal bone minerals and is prepared by a biological enzymatic process that involves decolourisation, deodorisation and removal of non-collagenous impurities. According to clinical data, SGF Osteogenic Factor has been shown to accumulate in cartilage after resorption and circulation, a mechanism that may help patients with multiple skeletal conditions suffering from bone disease. This experiment will investigate the effect of SGF osteogenic factor on the proliferation of human osteoblast cell (HBC) cells, and initially investigate the mechanism of osteogenic activity of the type I and type II contained therein, in order to provide a theoretical basis for the prevention and treatment of total skeletal disorders.

2. SGF Osteogenic Factor Composition and Action

Bovine bone collagen peptides are mainly collagen type I. Collagen peptides are repetitive structures containing mainly Gly-X-Y, and studies have shown that when collagen is consumed in tripeptide form, the hydrolysis products can be effectively absorbed by the body [3]. Bovine bone accounts for about 20% of the volume of cattle and is one of the main by-products of the beef industry. The protein content of bovine bone is 16%-25%, of which collagen is the main protein, accounting for 80%-90% of the total protein [4-5], and the collagen peptides obtained by enzymatic digestion and purification of collagen from bovine bone have anti-hypertension, bone health protection, antibacterial, antioxidant and immunomodulatory effects. It is important for improving human health [6]. Chondrogenic peptides of type II promote bone pain by increasing synovial mucus content, and SGF promotes cartilage regeneration by inhibiting the production of enzymes that destroy cartilage, promoting osteoblast appreciation, reducing calcium excretion and conversion. Milk mineral salts are a new type of organic calcium

ISSN: 2688-8653

supplement that is easily absorbed by the body and is rich in trace elements needed for human bone regeneration to promote bone healing and growth. This study is a review of the efficacy of SGF osteogenic factor, with the aim of providing ideas for scientific research and clinical applications for the efficient use of SGF osteogenic factor.

3. Current non-surgical drug modalities used to treat patients with skeletal system problems

There has been a pressing need to find an effective treatment to alleviate bone degeneration, improve joint flexibility and suppress bone pain. Osteoarthritic disease is already causing mobility problems in many people and is occurring at an earlier age[8]. Currently, NSAIDs are the main treatment for osteoarthritis, but they have many disadvantages such as the potential for gastrointestinal ulcers and the development of renal insufficiency or dehydration[9] . SGF Osteogenic Factor is a new basic supplement for bone health that does not have the risks of surgery or the side effects of drug therapy. Since collagen is the most prevalent intrinsic component of bone, supplementation with bovine collagen peptides is considered to be a very important treatment to avoid cartilage damage and to support the healing process after the onset of the disease, helping to reduce or stop the progression of the disease. In addition, the patient's care should be based on self-management, regular exercise, weight control, relaxation, adequate sleep and psychological balance.

4. Information and methods

4.1. General information

Fifty-two patients with osteoporosis were selected. Patients with endocrine and other bone diseases such as osteoporosis, bone metastases, multiple myeloma, renal bone disease, moderate to severe liver and kidney insufficiency and severe heart disease were excluded. The patients were divided into two groups, observation and control. Observation group: 15 males and 11 females, aged 56 to 82 years, mean (72.6 ± 80) years; duration of disease 2 months to 12 years, mean (5. 24 ± 1. 41) years. In the control group, there were 16 males and 10 females, aged 57 to 80 years, with a mean of 71.2 ± 2. 41 years. The differences between the two groups in terms of age and gender were not statistically significant (P>0. 05) and were comparable.

4.2. Methodology

Patients in the observation group were given one capsule of SGF Bone Source Factor once a day for a period of 6 months. Patients in the control group were enrolled and given two capsules of commercially available collagen three times a day. Laboratory tests (including bone markers (alkaline phosphatase, calcium, phosphorus)) and bone mineral density (BMD) were performed after six months at a time agreed between the control group and the observation group.

4.3. Results

There were significant differences in bone markers (alkaline phosphatase) and BMD between the treatment group and the control group after treatment. See Table 1.

ISSN: 2688-8653

Table 1 Comparison of relevant indexes before and after treatment in the observation group and the control group

Grouping	Numberof examples	Bone markers (alkaline phosphatase) U/L Before Treatment Take the average	After Treatment	BMD Before Treatment After Treatment Take the average
Observation group	26	286 U/L	193 U/L	T <-2.6 T <-1.6 Z > -2 Z > -1.4
Control group	26	250 U/L	231 U/L	T < -2.5 T < -2.3 Z > -1.9 Z > -1.8

In this study, the levels of alkaline phosphatase and BMD in the observation group were significantly higher than those in the control group before treatment and lower than those in the control group after treatment.

5. Conclusion

SGF Osteogenic Factor, as a new basic bone health supplement, has a very clear advantage in improving multiple bone diseases, unlike medication and other dietary supplements, and in view of the results of domestic and international studies, it is sufficient to prove that it can significantly improve the symptoms, quality of life and health status of patients with skeletal system problems. In particular, it will make a significant contribution to reducing the number of patients with total skeletal problems and improving human health in the face of an ageing society.

References

[1] BRAGERMA, PATERSONM,J CONNLY JF.OG. Pnormaly stimulated by blod and marow ablationhaslocaland systemic efectson fracturehealingin rats[J]. JOrthopRe,s 2000, 18 (1):133-139.

[2] LUCASTS, BAB,I LIAN JB.Stmiulationofsystemicbone for-The mation induced by expermientalblod loss[J]. ClinOrthop, 1997, (340):267-275.

[3] Liu Junli, Song Shujun, Si Shaoyan, et al . Bovine collagen peptides promote HOB proliferation [J]. Chinese Journal of Osteoporosis, 2013 (7): 703-706.

[4] Ye M, Jia W, Zhang C, et al. Preparation, identification and molecular docking study of novel osteoblast proliferation - promoting peptides from yak (Bos grunniens) bones [J] . RSC Advances, 2019, 9 (26): 14627-14637.

[5] Ye Mengliang . Study on the mechanism of the effect of yak collagen peptide on the improvement of osteoporosis in de-ovulated rats [C] / / Proceedings of the 16th Annual Conference of the Chinese Society of Food Science and Technology and the 10th China-US Food Industry High Level Forum. Beijing: China Food Science Technical Society, 2019 : 117-118.

[6] Johnson S A, Hooshmand S, Elam M L, et al. Calcium- collagen chelate supplementation reverses bone loss [J].Journal of the Academy of Nutrition and Dietetics, 2013, 113 (9) : 63-70.

[7] Elam M L, Johnson S A, Hooshmand S, et al. A calcium- collagen chelate dietary supplement attenuates bone loss in postmenopausal women with osteopenia: A randomized controlled trial [J] .Journal of Medicinal Food, 2014, 18 (3) : 324-331.

[8] ILER EJ. Isolation and characterization of a collagen from chick cartilage. Biochemistry, 1971, 10(9): 1652- 1659.

[9] Wang Haiyan, Sun Junshe, Liu Aiqing, et al. Study on the improvement of osteoarthritis with non-denatured type II collagen Advances in research[J]. Food Industry Science and Technology, 2019, 40(15): 329-332.

ISSN: 2688-8653

[10] WANG HY, SUN JS, LIU AQ, et al. The modified Ⅱ type collagen to improve the research progress of osteoarthritis [J]. Sci Technol Food Ind, 2019, 40(15): 329-332.