

Clinical application of atelocollagen in spine surgery

허 정 우

가톨릭대

Collagen is a group of structural proteins of the extracellular matrix organized in a fibrillar arrangement. They are very abundant, particularly in mammals (up to 25% of total proteins), as structural and biologically active components of tissues including skin, bone, and cartilage. Collagen has a complex structural and hierarchical organization, with more than 20 types reported up to now. Collagen fibers act to transmit forces, dissipate energy, and prevent mechanical failure in connective tissue.

A collagen molecule has an amino acid sequence (called a telopeptide) at both N- and C-terminals, which confers most of the collagen's antigenicity. Atelocollagen obtained by protease or pepsin treatment is low in immunogenicity because it is free from telopeptides. Highly purified atelocollagen has many advantages for biocompatibilities and optimizing collagen-cell interaction for efficacy and lowering side effects. There are 2 types (gel and patch type) of atelocollagen products. In this study, we used a gel type.

Our hypothesis was that atelocollagen promotes the production of type I collagen and enhances the healing effect on muscle injury after conventional spine surgery.