

**Sodium Hyaluronate**  
**evaluation of intra-articular injection**  
**in the treatment of Osteoarthritis of Temporomandibular Joint**  
**(clinical and an experimental study)**

**A Thesis**

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## **Abstract**

A clinical and an experimental study were carried out to determine the therapeutic effect of sodium hyaluronate(SH)on patients with osteoarthritis of temporomandibular joint who did not response to conservative therapy. A two intra-articular (IA) injection of SH with a two weeks interval have been proposed to the 15 patients with a three months follow up. The diagnosis has been confirmed by X-ray(panoramic radiograph) .

The primary efficacy parameter was mouth opening before and after treatment and pain on movement measured by visual analog scale (VAS).

The clinical result was possible to record that spontaneous opening of the mouth had improved and the pain on movement has been decreased after two injections.

Because of the difficulties of taking biopsy from the human being, we decided to perform same treatment procedure on rabbits.

The an experimental part of this study was carried out to determine the therapeutic effect of sodium hyaluronate (SH) and methylprednisolone (MP) on experimental induced osteoarthritis of rabbits temporomandibular.

The animals were 49 local male rabbits, divided into four groups twelve for each one. The bilateral osteoarthritis induction of the TMJ was carried out to the twenty four rabbit by perforating discs and by scrapping condylar surface.

24 rabbits were injected in the right side with (SH) and in the left side with normal saline 12 rabbits scarified after one month post operation(MPO) group (A).And the other 12 rabbits were scarified after 3MPO.group (B).

The other 24 rabbit injected by Methylprednisolone in the right TMJ while in the left injected with normal saline the period and amount injected as same as applied in (SH) group so, here we have group (C) and (D).and one rabbit used for normal histology.

The biopsies were, investigated histological changes that occurred on the of condylar head after induction of osteoarthritis and also after treatment with SH and MP and make comparisons between of them depending on changes in the osteoarthritic score.

Various tissue response such as fibrillation; erosion; bone marrow fibrosis were evident in the normal saline side while in the treated side the SH and MP ameliorated the degenerative changes in different degree. There was significant differences at 0.05 between the SH treated group and MP treated group in 1 MPO and high significant differences at 3MPO.