

Research and Emerging Technologies
TMJ Disorders

Tempromandibular joint (TMJ) response to intra-articular dexamethasone injection following mechanical arthropathy: a histological study in rats

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Abstract. The purpose of this study was to evaluate as well as to compare the effect of intra-articular versus intra-peritoneal injection of dexamethasone on synovitis induced by trauma to the rat's TMJ.

Twenty-seven male Wister rats were included in the present study. Induced forced condylar hypermobility achieved through opening the rat's mouth manually 10 times for 10 consecutive days. Rats were randomized into three groups (3 rats in the control group, and 24 rats in both experimental groups).

Group I (control group): Rats of this group were left without any treatment after induction of synovitis.

Group II: Rats were injected with a single dose of 1.2 mg/kg dexamethasone intra-articularly (after 10 days).

Group III: Rats were injected with a single intra-peritoneal injection of 1.2 mg/kg dexamethasone (after 10 days).

Control rats were sacrificed at 6 weeks, while rats in Groups II and III were sacrificed at 1 and 6 weeks after drug injection, then joints were dissected and processed for histological study.

The condylar head of the rats injected with intra-articular dexamethasone showed resorption with active osteoclastic activity, although the drug was given only once. This might be an alarming sign of the severe adverse effect(s) of the local injection of dexamethasone.

Key words: intra-articular injection; dexamethasone injection; TMJ animal model.

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