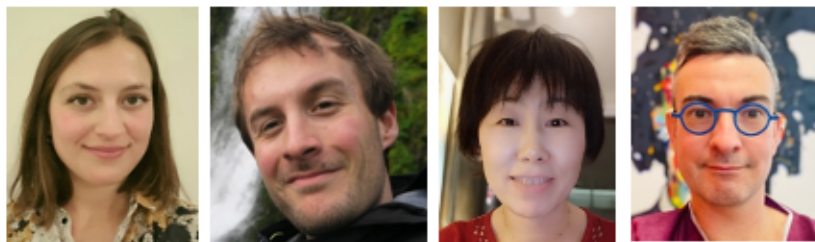




## **Intra-articular use of botulinum toxin A in the analgesic management of temporomandibular joint osteoarthritis: a comparative trial in rats**

### **Authors :**

Marie Béret, Florent Barry, Feng Chai, Romain Nicot



### **Institutions :**

Inserm U1008, Université de Lille, CHU de Lille

### **Abstract :**

Introduction: Temporomandibular disorders (TMD) are complex pathologies, responsible for chronic orofacial pain. Among the current treatments, intramuscular injection of botulinum toxin A has already shown its effectiveness in some TMDs such as masticatory myofascial pain. Its intra-articular injection has been mainly studied in knee or shoulder osteoarthritis and has shown promising results with a reduction in pain but remains controversial.

The aim of our study was to evaluate the effect of intra-articular injection of botulinum toxin A into the temporomandibular joints on pain using temporomandibular joint osteoarthritis model in rats.

A rat model of temporomandibular osteoarthritis was used to compare the effect of intra-articular injection of botulinum toxin A, saline and hyaluronic acid. Pain assessment by head withdrawal test, histological analysis, and imaging were performed in each series at different time points of the study until D30.

Intra-articular injection of botulinum toxin A or hyaluronic acid showed a significant decrease in pain in rats compared with saline to D14. The effect of botulinum toxin A was prolonged to D21. The histological and radiographic data seem to show a decrease in joint inflammation in the botulinum toxin and hyaluronic acid groups compared with saline.

Conclusion: This study in rat temporomandibular osteoarthritis shows an interest of intra-articular injection of botulinum toxin A in a temporomandibular osteoarthritis model in rats over saline.