

Temporomandibular Joint Involvement  
in Juvenile Idiopathic Arthritis

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Juvenile Idiopathic Arthritis (JIA) is an autoimmune disease that may lead to inflammation of multiple joints at a young age, often complicated by destruction and growth disturbances, including the craniofacial region. The annual incidence is reported as 0.008–0.226 per 1000 children [1]. Temporomandibular Joint (TMJ) arthritis in children with chronic arthritis was first reported by Still in 1897 [2]. The TMJ is frequently affected (17-88%) in JIA patients and it has a high risk for inflammation and destruction among them [3]. The often undetected arthritis in the TMJ might cause significant destruction and craniofacial developmental abnormalities [1].

The TMJ is particularly susceptible to damage from arthritis due to its unique anatomy and biochemical composition [2]. Unlike other diarthrodial joints, the mandibular growth plate is located just beneath the fibrocartilage of the condylar head, making it particularly vulnerable to inflammatory damage. Damage to the mandibular growth center due to inflammation or trauma during prenatal period until just after puberty frequently results in alterations in mandibular growth. Untreated, TMJ arthritis leads to micrognathia, poor mouth opening, facial dysmorphism and lifetime disability [4-6].

The frequency of JIA is comparable to that of other diseases with high craniofacial impact, such as cleft lip/palate where a multidisciplinary treatment approach has been established successfully. In the case of JIA, such an approach is still lacking. The possible therapeutic measures for JIA patients with TMJ involvement are currently still at a clinical level of evidence [1].

Despite the effectiveness of currently available treatments, the optimal treatment for a child with TMJ arthritis is yet to be established. Intraarticular corticosteroid injections for TMJ arthritis in JIA have been shown to improve TMJ range of motion and improvement of TMJ inflammation measures; possible drawbacks are lipoatrophy at the injection site, TMJ avascular necrosis and infections [5,7-9].

TMJ arthritis does not appear to respond fully to aggressive systemic therapy for arthritis, including anti-TNF agents [4,5,10]. Several studies have demonstrated improvement with local TNF antagonist therapy [4,11-13]. Future studies are needed in order to compare intra-articular infliximab to intra-articular corticosteroid injections for the treatment of TMJ arthritis.

Dexamethasone Iontophoresis (DIP) is a noninvasive physiotherapy modality that allows transdermal delivery of dexamethasone. Low-grade electric currents lead to the dissociation of hydrophilic medications into ions that penetrate anatomic structures. However, further research is required to determine the optimal number of DIP sessions based on sensitive imaging approaches, durability of treatment response, and performance of DIP in direct comparison to intraarticular corticosteroid injection to the TMJ [7,14-16].

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