

**Republic of Iraq  
Ministry of High Education  
University of Baghdad  
College of Dentistry**



**Oral Health Status and Temporomandibular Joint  
Disorder among Patients with  
Juvenile Idiopathic Arthritis attending  
Baghdad Teaching Hospital**

**A Thesis**

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## Abstract

**Background:** Juvenile idiopathic arthritis is a chronic disease of childhood. Some abnormalities of the immune system are present in all juvenile idiopathic arthritis patients. In its most severe clinical form, this disease may show localized and/or systemic and oral complications. This may result in different growth and developmental anomalies. As a result, it is common for juvenile idiopathic arthritis patients to present with skeletal Class II and open bite malocclusions. In addition to increased prevalence of dental caries and periodontal disease in juvenile idiopathic arthritis cases may be attributed to a combination of etiological factors

**Aims of the study:** This study was conducted among patients with juvenile idiopathic arthritis to assess their oral health status, temporomandibular joint (TMJ) disorder, in relation to the gender, age of the patients, duration of illness and types of medications.

**Material and methods:** A research was conducted from 19/11/2014-19/4/2015 among patients with juvenile idiopathic arthritis attending Baghdad Teaching Hospital Department of Rheumatology. They underwent a systematic clinical evaluation of their dental, oral and TMJ condition. Diagnosis and recording of dental caries were done according to the criteria of WHO (1997). Dental plaque was assessed by using plaque index following the criteria of Silness and Løe (1964), gingival condition was assessed by using gingival index of Løe and Silness (1963), calculus was assessed by using calculus component of Ramfjord index (1959), Temporomandibular joint disorder was assessed by using Helkimo's index. All these were assessed according to the gender, age of the patients, duration of illness and types of medications.

**Results:** The results of the study showed eighty one patients with mean age  $17.59 \pm 9.63$  years old and mean Illness duration of  $8.45 \pm 9.29$  years with juvenile idiopathic arthritis attending Baghdad Teaching Hospital during five months period

There were 6.17 % of juvenile idiopathic arthritis patients caries-free. A higher percentage of caries free patients was recorded among patients of 2.5-10 years old (15.4%) compared to 11-20 years old (2.8%) and (0%) in 21 years and above.

Caries experience of primary teeth (dmft) recorded a higher mean value ( $3.77 \pm 3.02$ ) among (2.5-10) years. Also higher mean value of dmft ( $2.67 \pm 2.93$ ) in children equal or less than 6 years disease duration decreased to ( $0.90 \pm 1.52$ ) with the disease advance (more than 6 years duration). No significant difference in mean value of dmft according to drug type.

Caries experience of permanent teeth (DMFT) recorded a higher mean value ( $7.56 \pm 5.14$ ) among (21+) years. Also higher mean value of DMFT ( $9.60 \pm 5.30$ ) in patients with long duration of disease followed by the second group ( $4.75 \pm 3.11$ ) while the lowest among the first group ( $3.27 \pm 3.21$ ). No significant difference in mean value of DMFT according to drug type.

A higher mean value was recorded in plaque, gingival and calculus indices ( $1.09 \pm 0.14$ ,  $0.83 \pm 0.29$ ,  $0.17 \pm 0.30$ ) respectively among (21+) years (third age group) while the first age group (2.5-11) years had the lowest mean value in plaque, gingival and calculus indices respectively ( $0.83 \pm 0.29$ ,  $0.98 \pm 0.19$ ,  $0.00 \pm 0.02$ ). A higher mean value of plaque, gingival and calculus indices was recorded among patients with duration between 11-20 years ( $1.11 \pm 0.32$ ,  $1.10 \pm 0.16$ ,  $0.16 \pm 0.34$ ) respectively while the lowest mean value of plaque index was in the third age group ( $0.94 \pm 0.34$ ), and lowest value of gingival and calculus indices was in the first age group ( $1.00 \pm 0.19$ ,  $0.05 \pm 0.23$ ) respectively. No significant difference was recorded in mean value of plaque, gingival and calculus indices between different treatment regimes.

In concern to clinical dysfunctional index (CDI) of tempromandibular joint, the occurrence of symptoms of tempromandibular joint dysfunction was about (93.8%). Patients with JIA under age group (21+) years exhibited a higher mean value of clinical dysfunctional index ( $8.13 \pm 7.98$ ) compared to the patients in younger age group (2.5-10) years comprised the lowest mean value of CDI of TMJ ( $5.62 \pm 5.79$ ). A higher mean value of clinical dysfunctional index was recorded ( $10 \pm 9.58$ ) with long duration of disease while the lowest mean value ( $5.89 \pm 5.71$ ) in the beginning of disease. The highest mean value of clinical dysfunctional index was recorded ( $10.78 \pm 8.14$ ) among patients treated with prednisolone, while a patients treated with combination of drugs were the least affected ( $4.69 \pm 4.82$ ).

**Conclusion:** This study confirms that patients with juvenile idiopathic arthritis have a high percentage of tempromandibular joint dysfunction and the systemic effect of chronic disease impact on oral health, dental caries, periodontal disease, development of TMJ and facial growth defects.