

# JIA Remission May Be Elusive Despite Therapy

BY MICHELE G. SULLIVAN

FROM THE CONGRESS OF THE PEDIATRIC RHEUMATOLOGY EUROPEAN SOCIETY

VALENCIA, SPAIN – Despite treatment, nearly half of children with juvenile idiopathic arthritis continue to experience active disease and many report significant physical fatigue, according to researchers.

“Our results point out that JIA is a controllable and treatable, but not curable, disease for a majority of the children,” coauthor Dr. Marite Rygg of St. Olav’s Hospital, Trondheim, Norway, said in an interview.

Her colleague, Dr. Ellen Nardal, reported 7-year follow-up data on 427 children who were enrolled in the Nordic Juvenile Idiopathic Arthritis Cohort from 1997-2000. The cohort comprised patients from 12 centers in Norway, Finland, Sweden, and Denmark. At the congress, Dr. Nardal reported complete follow-up data on 427 of the children.

Most the patients (66%) were girls. Their median age at the onset of disease was 6 years. The most common arthritis subtype in the group was oligoarthritis; this was persistent in 126 and extended in 75. Other disease subtypes included polyarthritis (82); psoriatic arthritis (13); enthesitis-related arthritis (49); undifferen-

tiated arthritis (64), and systemic arthritis (18). Uveitis developed in 89 children during the follow-up period.

At baseline, almost all of the children (97%) had taken a nonsteroidal anti-inflammatory drug. About half (48%) had taken methotrexate, while 74% had received intra-articular glucocorticoids and 32% received oral glucocorticoids. More than half (58%) had used a disease-modifying anti-rheumatic drug, including an anti-TNF (anti-tumor necrosis factor) drug. Only 3% were not taking any medications at baseline.

The mean follow-up period was 98 months. By then, 42% were in remission and off medication. However, more than half of the group (58%) were either not in remission (49%) or were in remission on medication (9%) said Dr. Nardal, a pediatric rheumatologist at the University Hospital of North Norway, Tromsø.

Rates of remission off medication varied by subtype, with the greatest rate occurring among those with systemic arthritis (83%). The lowest rates occurred in those with extended oligoarthritis (21%) and psoriatic arthritis (23%).

The highest rates of ongoing disease occurred in those who had rheumatoid factor-positive polyarthritis (67%) and extended oligoarthritis (63%). More than half of children with rheumatoid factor-negative polyarthritis, psoriatic arthritis, enthesitis-related arthritis, and undifferentiated arthritis also failed to achieve remission.

Fatigue is another aspect of the disease that affects young people as they grow into their teens, according to reg-

## JIA Remission by Disease Subtype

Subtype	Remission off meds	Remission on meds	Not in remission
Systemic	83%	0	17%
Persistent oligoarthritis	66%	3%	31%
Extended oligoarthritis	21%	16%	63%
RF- polyarthritis	28%	14%	58%
RF+ polyarthritis	33%	0	67%
Psoriatic	23%	23%	54%
Enthesitis-related	31%	8%	61%
Undifferentiated	41%	6%	53%
ALL	42%	9%	49%

Note: Based on 7-year follow-up data for 427 children.  
Source: Dr. Ellen Nardal

istered nurse Deborah Hilderson of the Catholic University of Leuven, Belgium. She presented the results of a small cross-sectional study of 31 adolescents with JIA, which examined the impact of fatigue on their daily lives. The patients were compared with a group of healthy controls used in a 2003 study of excess fatigue in young adult survivors of childhood cancer (Eur. J. Cancer 2003;39:204-14).

The patients had a mean age of 16 years; all had been treated at the University Hospital Leuven (Belgium). Most (23) were female. Persistent or extended oligoarthritis was present in 11 patients; rheumatoid factor-negative polyarthritis in 9; systemic arthritis in 4; and enthesitis-related arthritis in 7.

They completed two quality of life measures. The Multidimensional Fatigue Inventory (MFI) scores fatigue on a 20-point scale in five domains: general fatigue, physical fatigue, mental fatigue, reduced activity, and reduced motivation. High scores indicate higher fatigue levels. The 100-point Quality of Life Linear

Analog Scale rates 100 as the best quality of life imaginable, and 0 the worst.

About 13% of the patients reported a score of 15 or higher in the general fatigue domain of the MFI. There were no significant differences between the disease subtypes for any of the five fatigue domains. Compared with controls, patients reported significantly higher scores for physical fatigue and reduced activity. However, Ms. Hilderson noted, although the differences were statistically significant, the actual differences were “rather small.”

The median quality of life score was 74, but the range was wide (10-97). Higher quality of life scores were significantly associated with lower fatigue scores. There was a moderate association between quality of life and general and mental fatigue, Ms. Hilderson said.

“Fatigue does seem to be a problem for adolescents with JIA, and we, as health care providers, do need to pay attention to this complaint, particularly in patients with active arthritis,” Ms. Hilderson said. ■

## VITALS

**Major Finding:** More than half of 427 children with juvenile idiopathic arthritis were not in remission or were in remission but still taking medications, after 98 months of follow-up.

**Data Source:** A report of 7-year follow-up data on 427 children enrolled in the Nordic Juvenile Idiopathic Arthritis Cohort from 1997-2000.

**Disclosures:** Neither Dr. Rygg, Dr. Nardal, nor Ms. Hilderson disclosed any potential financial conflicts.

# Dental Splint Can Correct Facial Deformities in TMJ Arthritis

BY MICHELE G. SULLIVAN

FROM THE CONGRESS OF THE PEDIATRIC RHEUMATOLOGY EUROPEAN SOCIETY

VALENCIA, SPAIN – An acrylic dental splint that is gradually adjusted over a long treatment period can accelerate mandibular growth in children with temporomandibular joint involvement in juvenile idiopathic arthritis, lengthening the affected side and normalizing jaw appearance and function.

“We found that we were able to speed up the metabolic growth rate of the affected side more than the unaffected side,” when the splint was used, Peter Stoustrup, D.D.S., reported at the congress. “We have also seen that this splint treatment seems to exert a protective effect on the inflamed joint, which can reduce soft-tissue damage and pain.”

He reported results of a series of 22 patients with JIA that was complicated by TMJ arthritis. Mean age at disease onset was 7.5 years, and the mean treatment time was 57 months, although this varied widely (1-11 years).

The primary outcomes, determined by baseline and final radiographs, were changes in the ratio between the unaffected and affected sides in condylar height, vertical ramus length, and total vertical mandibular height.

At the end of the study, the ratio of condylar height between the affected and unaffected sides was reduced

from 1.18 to 1.14, which was not a significant change.

The ratio for vertical ramus length did change significantly, from 1.11 to 1.03. The ratio for total vertical mandibular height also significantly improved, dropping from 1.12 to 1.06.

The treatment was deemed successful in 19 (86%) of the patients. Three did not have satisfactory results and were referred for surgery.

TMJ arthritis occurs in about 62% of children with JIA, at least as confirmed by radiologic studies, said Dr. Stoustrup of the school of dentistry at Aarhus (Denmark) University. However, he noted, contrast-enhanced MRI suggests that the disorder could be even more common.

TMJ arthritis can lead to mandibular growth deviation resulting in micrognathia and shortened ramus length, an external rotation of the joint, open mandibular angle, cystic bone in the joint, and pain during chewing. The asymmetric growth can also result in a very specific appearance to the lower face. This facial deformity, often referred to as “bird face,” gives the lateral profile a reduced mandibular projection, with mandibular retrognathia, an open anterior bite, lower incisor crowding, and incisal protrusion.

“This is very difficult to correct orthodontically,” Dr. Stoustrup said. Most children are eventually referred for surgical correction.

The acrylic temporomandibular splint was first described by Dr. Thomas Pedersen in 1995 (Eur. J. Orthod. 1995;17:385-94). The splint covers the occlusal surfaces of the teeth in the lower dental arch and is worn 24 hours a day. The splint’s posterior height is adjusted slightly upward every 8-10 weeks on the affected side. “This normalizes dentoalveolar vertical development,” Dr. Stoustrup said.

What does this mean clinically for children who were successfully treated?

Dr. Stoustrup described the case of a 13-year-old boy whose left TMJ arthritis was beginning to manifest as mandibular asymmetry. A frontal facial photo before treatment showed that the patient’s chin had deviated to the side of the affected joint, because of shortening of the mandible. He also displayed an open mandibular angle and posterior joint rotation pattern.

“We treated him with the distraction splint for 1.5 years,” Dr. Stoustrup said. At the end of treatment, the patient showed a much more anterior joint rotation pattern “because the mandible angle was increased.” The associated soft-tissue appearance was also much improved; the final facial photos showed that his chin was much more centered because of symmetrical jaw lengths.

Dr. Stoustrup did not disclose any financial conflicts of interest. ■