Evaluation of ILAR Classification Criteria for Juvenile Idiopathic Arthritis in Spanish Children

ROSA MERINO, JAIME DE INOCENCIO, and JULIA GARCÍA-CONSUEGRA

ABSTRACT. ***Objective***. To evaluate the proposed International League of Associations for Rheumatology (ILAR) classification criteria for juvenile idiopathic arthritis in a cohort of Spanish children.

Methods. One hundred twenty-five patients with chronic arthritis were categorized according to one of the traditional classifications and the proposed ILAR classification system after at least 6 months of disease. The traditional classifications included the European League Against Rheumatism (EULAR) criteria for pauciarticular, polyarticular rheumatoid factor (RF) negative, and systemic juvenile chronic arthritis (JCA), as well as for RF+ polyarthritis; the Vancouver criteria for juvenile psoriatic arthritis (JPsA); and the European Spondylarthropathy Study Group (ESSG) preliminary criteria for juvenile spondyloarthropathy (JSpA).

Results. The ILAR criteria classified 106/125 patients (84.8%). All patients with systemic and polyarticular JCA, RF+ polyarthritis, and definite juvenile psoriatic arthritis were reclassified in the corresponding ILAR category. In contrast, only 80% of pauciarticular JCA and 47% of JSpA patients could be allocated to the ILAR oligoarthritis (47/59 patients, 35 persistent and 12 extended) and enthesitis related arthritis (ErA, 8/17 patients) categories. Two children with probable PsA were reclassified in the RF– polyarthritis category. Nineteen patients (15.2%) were allocated to the ILAR "other arthritis" group, 13/19 because they did not fulfill criteria for any of the other categories (12 due to family history of psoriasis and one because of family history of HLA-B27 associated disease). The remaining 6 patients met criteria for 2 categories, RF– polyarthritis and either ErA (n = 5) or PsA (n = 1). No differences other than family history of psoriasis were found in any of the variables studied between pauciarticular JCA patients classified in the oligoarthritis (n = 47) and those in the "other arthritis" (n = 11) ILAR categories.

Conclusion. The proposed ILAR criteria allocated 84.8% of the patients classified by traditional criteria. Family history of psoriasis (n = 12) and polyarticular onset of disease in patients with ErA (n = 5) were responsible for most of the exclusions from other ILAR categories. (J Rheumatol 2002;29:2731–6)

Key Indexing Terms:
CHILDHOOD ARTHRITIS
CLASSIFICATION CRITERIA
JUVENILE SPONDYLOARTHROPATHY
JUVENILE IDIOPATHIC ARTHRITIS
JUVENILE CHRONIC ARTHRITIS
JUVENILE PSORIATIC ARTHRITIS

Chronic arthritis of childhood is a heterogeneous group of diseases classified according to certain clinical characteristics. The different classification criteria used around the world overlap and make comparability of genetic, serologic, epidemiologic, and therapeutic data difficult and less reliable.

The Classification Task Force of the Pediatric Standing Committee of the International League of Associations for Rheumatology (ILAR) proposed new classification criteria in Santiago, Chile, in 1994[1]. The aim of the committee was to propose "a unified, internationally acceptable and applicable set of classification criteria...to facilitate more meaningful research and better patient care"[1]. In 1997 the criteria were reviewed in Durban, South Africa, and the term juvenile idiopathic arthritis (JIA) was adopted as an umbrella term[2]. JIA indicates arthritis with onset before the 16th birthday, persisting for at least 6 weeks, and of unknown cause. Members of the ILAR classification committee have asked for international collaboration to evaluate the criteria in different patient populations[3].

We evaluated the applicability of the ILAR criteria in a Spanish outpatient pediatric rheumatology clinic.

MATERIALS AND METHODS

The study included 125 consecutive patients followed at the pediatric rheumatology clinic of a tertiary center, University Hospital La Paz, who had arthritis for at least 6 months. The patients, identified retrospectively, were evaluated between January 1999 and March 2000. All patients had been classified according to one of the following traditional classification criteria: European League Against Rheumatism (EULAR) criteria[4] for systemic, polyarticular, and pauciarticular juvenile chronic arthritis (JCA), as well as for rheumatoid factor (RF) positive polyarthritis; European Spondylarthropathy Study Group (ESSG) preliminary criteria for juvenile spondyloarthropathy

From the Unit of Pediatric Rheumatology, University Hospital La Paz; and CS Estrecho de Corea, Insalud Area 4, Madrid, Spain.

R. Merino, MD, Unit of Pediatric Rheumatology, University Hospital La Paz; J. De Inocencio, MD, PhD, CS Estrecho de Corea, Insalud Area 4; J. García-Consuegra, MD, Unit of Pediatric Rheumatology, University Hospital La Paz.

Address reprint requests to Dr. R. Merino, Unit of Pediatric Rheumatology, University Hospital La Paz, Po de la Castellana 265, 28046 Madrid, Spain.

Submitted November 30, 2000; revision accepted July 10, 2001.

(JSpA)[5]; and Vancouver criteria for juvenile psoriatic arthritis (JPsA)[6]. After at least 6 months of disease patients were reclassified according to the proposed ILAR criteria. Family history of psoriasis was confirmed by a dermatologist in all cases. Family history of HLA-B27 associated disease included SpA and inflammatory bowel disease, diagnosed by a rheumatologist and a gastroenterologist, respectively.

Comparisons between groups were calculated using the 2 tailed Mann-Whitney U test or Fisher exact test when appropriate. The chi-square test was used to compare categorical data. Statistical significance was set at 0.05 for all tests. All calculations were performed using the statistical package SPSS 8.0 for Windows (SPSS Inc.)

RESULTS

The characteristics of the patients are shown in Table 1. The proposed ILAR criteria classified 106 out of 125 (84.8%) patients. The remaining 19 (15.2%) patients were put into the "other arthritis" JIA category, indicating that they could either be allocated to more than one category (n = 6) or were not classifiable (n = 13). Patient categorization according to traditional classification criteria and the ILAR criteria is shown in Table 2.

All patients with systemic JCA (n = 18), polyarticular (RF–) JCA (n = 25), RF+ polyarthritis (n = 2), and definite PsA (n = 2) were classified in the corresponding ILAR categories.

However, of the 59 patients with pauciarticular JCA only 47 (80%) could be allocated to the oligoarthritis JIA category (35 persistent, 12 extended). A boy positive for HLA-B27 with onset of oligoarthritis at age 12 years categorized as pauciarticular JCA because he did not meet ESSG criteria for JSpA (he had "arthritis" without "spinal pain" or any other ESSG criteria) fulfilled criteria for the ILAR enthesitis related arthritis (ErA) category ("arthritis" plus "presence of HLA-B27" and "onset of arthritis in a boy after the age of 8 years"). Regarding the remaining 11 pauciarticular JCA patients, 10 were excluded from the oligoarthritis category because of family history of psoriasis (7 in second-degree relatives including a 9-year-old girl with a positive RF test) and one because of a family history of HLA-B27 associated disease in a second-degree relative. No patient excluded because of family history of psoriasis met the ILAR criteria for PsA.

Similarly, of the 17 children who fulfilled the ESSG criteria for JSpA only 8 (47%) were reclassified in the ErA category. A 10-year-old girl with polyarthritis and enthesitis had a family history of psoriasis in a second-degree relative, which excluded her from the ErA class; on the other hand, she could be classified in the polyarthritis (RF–) JIA group. The remaining 8 JSpA patients were allocated in the "other arthritis"

Table 1. Patient characteristics.

	Female:Male	Median Age, yrs (range)	Median Disease Duration, yrs (range)	ANA Positive, n (%)	RF Positive, n (%)	HLA-B27 Positive, n (%)
ILAR categories						
Oligoarthritis, n = 47	40:7	7.4 (1.4–19.2)	3.9 (0.5–17.4)	38 (81)	—	5 (11)
Polyarthritis RF –, n = 28	22:6	9.2 (2.7–19.6)	4.7 (0.7–8.9)	16 (57)	—	2 (7)
Polyarthritis RF+, n = 2	2:0	18.0 (17.9–18.2)	6.7 (6.4–6.9)	2 (100)	2 (200)	—
Systemic, n = 18	9:9	11.8 (3.7– 22.8)	7.3 (3–20)	1 (6)	—	—
ErA, n = 9	1:8	16.6 (6.6– 21.4)	4.6 (1.2–8.3)	—	—	8 (89)
Psoriatic arthritis, n = 2	1:1	15.5 (14–16.9)	7.6 (5.9–9.3)	2 (100)	—	1 (50)
Other arthritis, n = 19	10:9	10.6 (5.3–18.9)	4.6 (0.7–8.7)	8 (42)	1 (5)	7 (37)

ANA: antinuclear antibodies; RF: rheumatoid factor; ErA: enthesitis related arthritis.

Table 2. Classification of patients according to the proposed ILAR and traditional classification systems.

	Proposed ILAR Classification Criteria							
	Oligo, n = 47	Poly RF–, n = 28	Poly RF+, n = 2	Systemic, n = 18	ErA, n = 9	PsA, n = 2	Other Arthritis* n = 13	n = 6
Traditional criteria								
Pauci JCA, n = 59	47**	—	—	—	1	—	11	—
Poly JCA RF–, n = 25	—	25	—	—	—	—	—	—
Poly RF+, n = 2	—	—	2	—	—	—	—	—
Systemic JCA, n = 18	—	—	—	18	—	—	—	—
JSpA, n = 17	—	1	—	—	8	—	2	6
JPsA, n = 2	—	—	—	—	—	2	—	—
Probable JPsA, n = 2	—	2	—	—	—	—	—	—

*19 Other arthritis:13 did not fit any other category and 6 could be classified in more than one category. **47 Oligoarthritis: 35 persistent oligoarthritis and 12 extended oligoarthritis. JCA: Juvenile chronic arthritis; RF: rheumatoid factor; JSpA: juvenile spondyloarthropathy; JPsA: juvenile psoriatic arthritis; ErA: enthesitis related arthritis; PsA:psoriatic arthritis.

group. A boy positive for HLA-B27 with onset of polyarthritis, inflammatory spinal pain, and enthesitis at age 13 years was excluded from the ErA category because of family history of psoriasis. This patient, however, met the ILAR definition criteria for both PsA (dactylitis and family history of psoriasis in a first-degree relative) and polyarthritis (RF–) JIA categories. Another 5 patients with JSpA were allocated in the "other arthritis" group because they satisfied the JIA definition criteria for both ErA and polyarthritis (RF–). It is remarkable that those 5 patients were HLA-B27 positive, and all but one, a boy with onset of arthritis after the age of 8 years, had enthesitis; the 5 of them, however, had had polyarthritis at disease onset. The other 2 patients classified as JSpA were also reclassified in the JIA-other arthritis category because of family history of psoriasis, in second-degree relatives in both cases.

There were 4 patients categorized as JPsA according to the Vancouver criteria. The 2 children with definite disease by the Vancouver criteria had arthritis and psoriasis, and they were classified in the PsA ILAR category. The 2 patients with probable disease by the Vancouver criteria were classified in the polyarthritis (RF–) JIA group. They were a boy and a girl with polyarthritis, dactylitis, and family history of psoriasis in second-degree relatives. They did not fulfill ILAR criteria for PsA because this category requires confirmation of psoriasis in a first-degree relative. On the other hand, a family history of psoriasis or HLA-B27 associated disease does not preclude allocation of patients to the polyarthritis (RF–) category.

Therefore, 19 patients (15.2%) were classified in the "other arthritis" JIA category. Twelve children (63%) were excluded from other ILAR categories because of family history of psoriasis, in second-degree relatives in 9/12 (including a girl with oligoarthritis and a positive RF test). Another patient was excluded from the oligoarthritis category because of a family history of HLA-B27 associated disease in a second-degree relative. The remaining 6 patients fulfilled criteria for 2 categories (ErA and RF– polyarthritis in 5, PsA and RF– polyarthritis in one).

Considering the influence that family antecedents of psoriasis and HLA-B27 associated disease had on the ILAR classification system, we analyzed the distribution of the subjects according to the proposed ILAR categories (Table 3). A family history of psoriasis was recorded in 24 patients (19%) across the JIA categories where it was allowed. Family history of HLA-B27 associated disease was present in 9 children (7%), including ankylosing spondylitis in 5, undifferentiated SpA in one, and inflammatory bowel disease in 3.

Finally, we examined whether patients with pauciarticular JCA reclassified in the ILAR oligoarthritis category (n = 47) differed from those allocated to the "other arthritis" class (n = 11). We performed a statistical analysis on several demographic, clinical, and serological variables (Table 4). No significant differences were found in any of the variables studied, with the exception of family history of psoriasis. Children allocated to the oligoarthritis category seemed to have an earlier onset of disease, although this variable did not reach statistical significance (p = 0.055). A similar analysis was not performed in other JIA categories due to the size of our sample.

DISCUSSION

The number of patients uniquely classified by the ILAR criteria in our Spanish population is very similar to that reported in other series from Germany (87.6% of 97 patients)[7] and Canada (88.4% of 70 patients)[8], despite the different traditional classification criteria used [EULAR in this study, American College of Rheumatology (ACR) in the other 2]. To our knowledge, this is the first report that reclassified patients categorized by the EULAR criteria according to the ILAR system. It should be kept in mind, however, that this study was performed on a well defined population with longstanding arthritis and not on newly diagnosed patients.

The proposed ILAR classification system allocated 106 of

Table 3. Family history of psoriasis and /or HLA-B27 associated disease in first or second-degree relatives in 125 patients with juvenile idiopathic arthritis.

ILAR Categories	Family History of Psoriasis		Family History of HLA-B27 Associated Disease	
	1st Degree, n = 8	2nd Degree, n = 16	1st Degree, n = 2	2nd Degree, n = 7
Oligoarthritis, n = 47	—	—	—	—
Polyarthritis RF–, n = 28	3	6	—	—
Polyarthritis RF+, n = 2	—	—	—	—
Systemic arthritis, n = 18	1	—	—	—
Enthesitis related arthritis, n = 9	—	—	1	3
Psoriatic arthritis, n = 2	—	1	1	—
Other arthritis, n = 19				
Did not fit any category, n = 13	3	9	—	1
Fit more than one category, n = 6	1*	—	—	3*

* A patient had family history of psoriasis in 1st degree and HLA-B27 associated disease in 2nd degree relatives.

Table 4. Comparison of pauciarticular JCA patients reclassified by the ILAR criteria in the oligoarthritis or the other arthritis diagnostic categories.

	Oligoarthritis, n = 47	Other Arthritis, n = 11	p
Age at onset, yrs, median (range)	2.6 (0.8–13.8)	4.9 (1.6–9.5)	0.055
Disease duration, yrs, median (range)	3.9 (0.5–17.4)	5 (0.9–8.6)	NS
Female, n (%)	40 (85)	8 (73)	NS
Pattern of arthritis (onset/course), %			
Involvement of small joints of the hands	13/17	9/46	NS/NS
Lower limb predominance	75/68	64/55	NS/NS
No upper or lower predominance	21/30	36/27	NS/NS
Symmetry of arthritis	13/21	27/27	NS/NS
Monoarthritis	53/34	36/9	NS/NS
Oligoarticular course	74	55	NS
Dactylitis,%	4	18	NS
Uveitis, %	26	9	NS
ANA+, %	81	73	NS
HLA-B27+ , %	11	—	NS
RF+ %	—	9	NS

ANA: antinuclear antibody; RF: rheumatoid factor.

our 125 patients (84.8%) into distinct diagnostic categories, but 15.2% failed to be classified and fell into the ILAR category of "other arthritis." Almost two-thirds of those children were allocated to this category only because of family history of psoriasis.

One of the main purposes of the ILAR classification system is to create more homogeneous diagnostic categories than current classification systems by using a more restrictive set of criteria, particularly in certain categories. In this regard, the criterion "family history of psoriasis in second-degree relatives" is responsible for a relevant number of allocations to the other arthritis group[7,8]. It represents an exclusion criterion for the oligoarthritis and ErA categories, but it does not allow reclassification in the PsA group. Considering the high frequency of psoriasis in the general population, it is not clear at this time whether this criterion will increase homogeneity within the categories or just interfere with the allocation of the patients. Indeed, our analysis of several variables in children with pauciarticular JCA reclassified in the oligoarthritis or in the other arthritis JIA categories revealed no differences other than family history of the disease. If the criterion "family history of psoriasis" was restricted to first-degree relatives, an additional 6 children would have been reclassified in the oligoarthritis and 2 in the ErA category. Therefore, 91% of the patients would have been classifiable by the ILAR system.

The current restrictiveness of the proposed ILAR criteria may have some unexpected effects, illustrated in the next 3 examples. First, a patient with polyarthritis, a family history of psoriasis in a second-degree relative, and either dactylitis or nail abnormalities suggestive of psoriasis cannot be classified in the PsA but rather in the polyarthritis (RF–) JIA category. This scenario is due to current ILAR definition of PsA that requires, in the absence of psoriasis, 2 of the following: dactylitis, nail abnormalities, and family history of disease in a first-degree relative. In contrast, a family history of psoriasis or HLA-B27 associated disease does not interfere with the allocation of patients to the polyarthritis (RF–) category, defined by the presence of polyarthritis during the first 6 months of disease in the absence of RF or systemic symptoms.

The second example relates to a more frequent clinical situation. An HLA-B27 positive patient with polyarthritis, enthesitis, and inflammatory spinal pain fulfills criteria for both polyarthritis (RF–) and ErA categories. Accordingly, this patient will be placed in the "other arthritis" JIA category. This situation is possible because the ILAR system does not consider the definition criterion of ErA as exclusion criterion for the polyarthritis (RF–) category. This has been observed in other series[7,9].

Finally, the presence of psoriasis in a patient with polyarthritis or oligoarthritis results — if the patient with oligoarthritis does not have family history of the disease — in classification in the "other arthritis" JIA category because the patient fulfills definition criteria for 2 categories (PsA and polyarthritis or oligoarthritis, respectively)[7].

The main strength of ILAR criteria is their potential to unify terms and concepts regarding idiopathic arthritides of childhood, avoiding the multiple, overlapping classification systems currently used. Those criteria, however, are undergoing evaluation to test their performance and their ability to classify more homogeneous groups of children with idiopathic arthritis.

The ILAR proposal includes definition criteria, i.e., the sets proposed by the ACR or EULAR, as well as exclusion criteria. The exclusion criteria would make the ILAR classification system more stringent than the others, at least a priori, resulting in a higher degree of homogeneity of children allo-

cated to a particular category. As discussed above, however, current criteria have not demonstrated that homogeneity has been achieved. Further interference with the homogeneity of the categories in our series includes the following considerations. First, the criterion "family history of psoriasis" is distributed across almost all ILAR categories, although it only excludes patients from the oligoarthritis and ErA groups. Second, RF– polyarthritis inclusion and exclusion criteria result in the classification of patients with SpA within the class. Third, patients with positive RF may end up classified in different categories depending on the number of joints involved at disease onset, despite future evolution.

The ILAR proposal represents a much needed effort to develop internationally accepted criteria that would facilitate communication among patients, physicians, and scientists and enable the identification of homogeneous groups of children with chronic arthritis. In light of this and other studies that have analyzed ILAR system performance, those criteria require further evaluation and revision.

ADDENDUM

During the review process of this manuscript other series and editorials addressing the performance of the ILAR classification criteria have been published[10,11].

ACKNOWLEDGMENT

The authors thank Dr. Daniel Lovell for his review of the manuscript.

APPENDIX. Classification systems used.

EULAR JUVENILE CHRONIC ARTHRITIS CRITERIA
1. Age of onset < 16 years
2. Arthritis in one or more joints
3. Duration of disease 3 months or longer
4. Type defined by characteristics at onset:
(A) Systemic: Arthritis with characteristic fever
(B) Pauciarticular: Arthritis in less than 5 joints
(C) Polyarticular: Arthritis in more than 4 joints, rheumatoid factor (RF) negative
(D) Juvenile rheumatoid arthritis: Arthritis in more than 4 joints, RF positive
(E) Juvenile ankylosing spondylitis
(F) Juvenile psoriatic arthritis

EUROPEAN SPONDYLARTHROPATHY STUDY GROUP CRITERIA
Inflammatory spinal pain, or synovitis (asymmetric or predominantly in lower limb) plus one of:
Positive family history
Psoriasis
Inflammatory bowel disease
Urethritis, cervicitis, or acute diarrhea within one month before onset of arthritis
Buttock pain alternating between the right and left gluteal regions
Enthesopathy
Sacroiliitis

VANCOUVER CRITERIA FOR JUVENILE PSORIATIC ARTHRITIS
1. Definite
(A) Arthritis and typical psoriatic rash or
(B) Arthritis with 3 of 4 minor criteria:
Dactylitis
Nail pitting or onycholysis
Psoriasis-like rash
Family history of psoriasis in a first or second-degree relative
2. Probable: Arthritis with 2 of 4 minor criteria

ILAR SYSTEMIC ARTHRITIS CATEGORY
Arthritis with or preceded by daily fever of at least 2 weeks' duration, documented to be quotidian for at least 3 days, and accompanied by one or more of the following:
(A) Evanescent, non-fixed, erythematous rash
(B) Generalized lymph node enlargement
(C) Hepatomegaly or splenomegaly
(D) Serositis

ILAR OLIGOARTHRITIS CATEGORY
Arthritis affecting 1–4 joints during the first 6 months of disease
(A) Persistent oligoarthritis: affects no more than 4 joints throughout the disease course
(B) Extended oligoarthritis: affects a cumulative total of 5 joints or more after the first 6 months of disease
Exclusions:
1. Family history of psoriasis confirmed by a dermatologist in at least one first or second-degree relative
2. Family history of HLA-B27 associated disease in at least one first or second degree relative
3. Positive RF test
4. HLA-B27 positive male with onset of arthritis after 8 years of age
5. Presence of systemic arthritis as defined above

ILAR POLYARTHRITIS RF NEGATIVE CATEGORY
Arthritis affecting 5 or more joints during the first 6 months of disease.
Exclusions:
1. Presence of RF
2. Presence of systemic arthritis as defined above

ILAR POLYARTHRITIS RF POSITIVE CATEGORY
Arthritis affecting 5 or more joints during the first 6 months of disease, associated with positive RF tests on 2 occasions at least 3 months apart.
Exclusions:
1. Absence of positive tests for RF on 2 occasions at least 3 months apart
2. Presence of systemic arthritis as defined above

ILAR PSORIATIC ARTHRITIS CATEGORY
1. Arthritis and psoriasis, or
2. Arthritis and at least 2 of:
(A) Dactylitis
(B) Nail abnormalities (pitting or onycholysis)
(C) Family history of psoriasis confirmed by a dermatologist in at least one first-degree relative
Exclusions:
1. Presence of RF
2. Presence of systemic arthritis as defined above

ILAR ENTHESITIS RELATED ARTHRITIS CATEGORY
1. Arthritis *and* enthesitis, or
2. Arthritis *or* enthesitis with at least 2 of:
Sacroiliac joint tenderness and/or inflammatory spinal pain
Presence of HLA-B27
Family history in at least one first or second-degree relative of medically confirmed HLA-B27 associated disease
Anterior uveitis that is usually associated with pain, redness, or photophobia
Onset of arthritis in a boy after the age of 8 years
Exclusions:
1. Psoriasis confirmed by a dermatologist in at least one first or second-degree relative
2. Presence of systemic arthritis as defined above

ILAR OTHER ARTHRITIS CATEGORY

Children with arthritis of unknown cause that persists for at least 6 weeks but that either:

1. Does not fulfill criteria for any of the other categories, or
2. Fulfills criteria for more than one of the other categories

Exclusions:

Patients who meet criteria for other categories

REFERENCES

1. Fink CW and the ILAR Task Force for Classification Criteria. Proposal for the development of classification criteria for idiopathic arthritides of childhood. J Rheumatol 1995;22:1566-9.
2. Petty RE, Southwood TR, Baum J, et al. Revision of the proposed classification criteria for juvenile idiopathic arthritis: Durban, 1997. J Rheumatol 1998;25:1991-4.
3. Petty RE, Southwood TR. Classification of childhood arthritis: Divide and conquer [editorial]. J Rheumatol 1998;25:1869-70.
4. Wood PHN. Nomenclature and classification of arthritis in children. In: Munthe E, editor. The care of rheumatic children. Basel: EULAR Publications; 1978:47-50.
5. Dougados M, van der Linden S, Juhlin R, et al. The European Spondylarthropathy Study Group preliminary criteria for the classification of spondylarthropathy. Arthritis Rheum 1991;34:1218-27.
6. Southwood TR, Petty RE, Malleson PN, et al. Psoriatic arthritis in children. Arthritis Rheum 1989;32:1007-13.
7. Foeldvari I, Bidde M. Validation of the proposed ILAR classification criteria for juvenile idiopathic arthritis. J Rheumatol 2000;27:1069-72.
8. Ramsey SE, Bolaria RK, Cabral DA, Malleson PN, Petty RE. Comparison of criteria for the classification of childhood arthritis. J Rheumatol 2000;27:1283-6.
9. Cleary AG, Sills JA, Davidson JE. Revision of the proposed classification criteria for juvenile idiopathic arthritis: Durban, 1997 [letter]. J Rheumatol 2000;27:1568.
10. Hofer MF, Mouy R, Prieur AM. Juvenile idiopathic arthritides evaluated prospectively in a single center according to Durban criteria. J Rheumatol 2001;28:1083-90
11. Petty RE. Growing pains: The ILAR classification of juvenile idiopathic arthritis. J Rheumatol 2001;28:927-8.