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NO DISCLOSURE

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Clinical assessment of the hips is difficult, hence the need for accurate diagnostic tools for active and chronic JIA changes







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Clinical assessment of the hips is difficult, hence the need for accurate diagnostic tools for active and chronic JIA changes

No child and hip-specific scoring system including both active and chronic changes has been validated yet









Pediatr Radiol (2012) 42:714-720 DOI 10.1007/s00247-012-2345-v

ORIGINAL ARTICLE

MRI assessment of bone marrow in children with juvenile idiopathic arthritis: intra- and inter-observer variability

Laura Tanturri de Horatio · María Beatrice Damasio · Domenico Barbuti · Claudia Bracaglia · Karen Lambot-Juhan · Peter Boavida · Lil-Sofie Ording Müller · Clara Malattia · Lucilla Ravà · Karen Rosendahl · Paolo Tomà

Pediatr Radiol (2013) 43:796-802 DOI 10.1007/s00247-012-2613-x

ORIGINAL ARTICLE

MRI assessment of tenosynovitis in children with juvenile idiopathic arthritis: inter- and intra-observer variability

Karen Lambot - Peter Boavida - Maria Beatrice Damasio -Laura Tanturri de Horatio - Marie Desgranges - Clara Malattia - Domenico Barbuti -Claudia Bracaglia - Lil-Sofie Ording Müller - Caroline Elie - Brigitte Bader-Meunier -Pierre Quartier - Karen Rosendahl - Francis Brunelle Pediatr Radiol (2012) 42:1047-1055 DOI 10.1007/s00247-012-2392-4

ORIGINAL ARTICLE

MRI of the wrist in juvenile idiopathic arthritis: proposal of a paediatric synovitis score by a consensus of an international working group. Results of a multicentre reliability study

Maria Beatrice Damasio - Clara Malattia -Laura Tanturri de Horatio - Chiara Mattiuz -Angela Pistorio - Claudia Bracaglia -Domenico Barbuti - Peter Boavida -Karen Lambot Juhan - Lal Sophie Mueller Ording -Karen Rosendahl - Alberto Martini -GianMichele Magnano - Paolo Tomà

Pediatr Radiol (2015) 45:1972-1980 DOI 10.1007/s00247-015-3421-x



ORIGINAL ARTICLE

Carpal erosions in children with juvenile idiopathic arthritis: repeatability of a newly devised MR-scoring system

Peter Boavida¹ · Karen Lambot-Juhan² · Lil-Sofie Ording Müller³ · Beatrice Damasio⁴ · Laura Tanturri de Horatio⁵ · Clara Malattia⁴ · Catherine M. Owens^{1,6} · Karen Rosendahl^{7,8}





To define and validate a new scoring system for active and chronic hip changes in children with JIA and to examine the precision of measurements used for the detection of growth abnormalities of the hip

Material and methods

3 week-end calibration sessions



60 MRIs from 60 JIA children with hip involvement scored by two sets of radiologists for active and chronic changes and growth abnormalities

An imaging atlas with relevant examples of each variable and grade was used as a reference

Kappa statistic and Bland Altman used

MRI protocol



Coronal 3D T1-w TSE

Coronal T2-w TSE FS

Coronal 3D GRE FS before contrast injection

Coronal 3D GRE FS immediately and 5 min after contrast injection

Results



Score 0 Score 1 Score 2 Score 3 Score 4

70

Synovial enhancement intensity



2

Degree of overall inflammation





Bone marrow oedema



Erosions on acetabulum



 $\left(\right)$

2

Active erosions on femoral head





Type of damage	Right∙hip¤		Left-hip¤	
	Intra-reader	Inter-reader¶	Intra-reader ¶	Inter-reader¶
	Kappa (95%CI)	Kappa (95%CI)¤	Kappa (95%CI)	Kappa¶
				(95%CI)¤
Inflammatory domain ?	1	1	٩	٩
- → Synovial enhancement (0-3)¶	0.7 (0.6-0.9)	0.3 (0.2-0.4)	0.7 (0.5-0.8)	0.4 (0.2-0.5)
- → Synovial enhancement (0-2)	0.8 (0.6-0.9)	0.4 (0.2-0.6)	0.7 (0.5-0.8)	0.5 (0.3-0.7)
- → Synovial enhancement (0-1)¶	0.7 (0.4-1.0)	0.2 (0.1-0.5)	0.5 (0.0-0.9)	0.1 (-0.2-0.5)
 → Synovial thickening subjective (0-3)¶ 	0.9 (0.8-1.0)	0.5 (0.3-0.7)	0.8 (0.6- 0.9)	0.4 (0.2-0.6)
- → Effusion (0-4)¶	0.6 (0.4-0.8)	0.4 (0.2-0.6)	0.7 (0.5-0.8)	0.3 (0.2-0.4)
- → Overall synovial inflammation (0-3)¶	0.8 (0.6-1.0)	0.4 (0.2-0.6)	0.7 (0.5-0.9)	0.4 (0.3-0.6)
- → Overall degree of inflammation,				1
included effusion (0-3)	0.7 (0.5-0.9)	0.6 (0.4-0.7)	0.7 (0.5-0.9)	0.6 (0.4-0.7)
- → Bone Marrow Oedema ¶				_
o → Femoral epiphysis (0-2)¶	0.7 (0.5-0.9)	0.4 (0.1-0.6)	0.7 (0.5-0.9)	0.3 (0.1-0.6)
o → Acetabulum (0-1)¶	0.7 (0.6-0.9)	0.2 (0.0-0.4)	0.7 (0.5-0.9)	0.3 (0.1-0.4)
o → Femoral neck (0-1)¶	0.7 (0.5-0.9)	0.3 (0.0-0.5)	0.7 (0.6-0.9)	0.3 (0.0-0.5)
1	1	1	1	1
Structural bone damage domain 7	1	1	1	1
- → Erosion · · ¶	1	1	1	1
○ → Femoral head (0-3)¶	0.7 (0.5-0.9)	0.4 (0.2-0.6)	0.8 (0.6-0.9)	0.5 (0.3-0.7)
o → Femoral neck (0-1)¶	0.8 (0.5-1.0)	0.2 (0.1-0.6)	0.7 (0.5-0.9)	0.1 (0.1-0.4)
o → Acetabulum (0-3)¶	0.6 (0.4-0.8)	0.6 (0.4-0.8)	0.7 (0.5-0.8)	0.6 (0 4-0.8)
o → Acetabulum (0-2) ¶	0.4-1.0)	0.3 (0.1-0.5)	0.5-0.8)	0.4 (0.2-0.6)
Active erosion femoral head (0-1)	0.9 (0.8-1.0)	0.6 (0.3-0.9)	0.9 (0.7-1.0)	0.6 (0 4-0.9)
- → Flattening of the femoral head (0-4)	0.7 (0.5-0.9)	0.4 (0.2-0.6)	0.6 (0.4-0.8)	0.3 (0.1-0.5)
- → Flattening femoral head Mose' (0-4)¶	0.7 (0.5-0.9)	0.3 (0.1-0.5)	0.6 (0.4-0.8)	0.3 (0.1-0.5)
Bone cyst (0-1)	1	1	1	1
o → Femoral head ¶	0.9 (0.6-1.0) 1	0.7 (0.4-1.0)	0.8 (0.6-1.0)	0.7 (0.5-1.0)
o → Acetabulum ¶	0.8 (0.5-1.0)	0.3 (0.0-0.7)	0.8 (0.5-1.0)	0.6 (0.3-0.9)
- → Enlarged fovea (0-2)¶	0.7 (0.6-0.9)	-0.1 (0.2-0.1)	0.8 (0.6-0.9)	0.1 (0.1-0-2)
- → Sclerosis (0-1)¶	0.8 (0.6-0.9)	0.1 (0.1-0.2)	0.8 (0.7-1.0)	0.1 (0.0-0.2)
- → Osteophytes (0-1)¶	0.9 (0.8-1.0)	0.0 (0.0-0.2)	0.9 (0.8-1.0)	0.2 (0.0-0.4)
- → Narrowed joint space height (0-3)¶	0.7 (0.6-0.9)	0.2 (0.0-0.4)	0.6 (0.5-0.8)	0.2 (0.1-0.4)
- → Cartilage changes (0-4)¤	0.4 (0.3-0.6)	0.3 (0.1-0.4)	0.4 (0.2-0.6)	0.3 (0.1-0.4)

Conclusions

A large number of MRIs variables for both active and chronic JIA features in our new scoring system have a good reproducibility

The different MRI variables could be not similarly representative of active inflammation and/or of significant long-term damage

We suggest to use the more precise variables in future studies assessing clinical validity and long-term patient outcomes





"FWORK ISN'T FUN, YOU'RE NOT PLAYING ON THE RIGHT TEANA@NichelleWomack

The role of MRI in the evaluation of hip joint disease in clinical subtypes of juvenile idiopathic arthritis

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Clinical Medicine

MDP

Article MRI Findings in Hip in Juvenile Idiopathic Arthritis

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Pediatric Radiology (2018) 48:1891-1900 https://doi.org/10.1007/s00247-018-4216-7

ORIGINAL ARTICLE



Inter- and intra-observer reliability of contrast-enhanced magnetic resonance imaging parameters in children with suspected juvenile idiopathic arthritis of the hip

Francesca M. Porter-Young 1 . Amaka C. Offiah 2 . Penny Broadley 3 . Isla Lang 3 . Anne-Marie McMahon 4 . Philippa Howsley⁴ · Daniel P. Hawley⁴

> Pediatr Radiol (2011) 41:432-440 DOI 10.1007/s00247-010-1897-v

ORIGINAL ARTICLE

Differences in MRI findings between subgroups of recent-onset childhood arthritis

Eva Kirkhus · Berit Flatø · Øystein Riise · Tor Reiseter · Hans-Jørgen Smith

Seminars in Arthritis and Rheumatism 51 (2021) 1350-1359



Consensus-driven conceptual development of a standardized whole body-MRI scoring system for assessment of disease activity in juvenile idiopathic arthritis: MRI in JIA OMERACT working group

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