

# Arthritis & Rheumatism

An Official Journal of the American College of Rheumatology  
www.arthritisrheum.org and www.interscience.wiley.com

VOLUME 58

JANUARY 2008

NO. 1

## Special Articles

- Editor's Note: A New Look  
*Michael D. Lockshin* ..... 1
- Editorial: Antiinflammatory Therapy for Rheumatoid Arthritis?  
*Irun R. Cohen and Lars Klareskog*..... 2
- Review: The Effects of Rituximab on Immunocompetency in Patients With Autoimmune Disease  
*R. John Looney, Renganathan Srinivasan, and Leonard H. Calabrese* ..... 5

## Epidemiology

- Estimates of the Prevalence of Arthritis and Other Rheumatic Conditions in the United States. Part I  
*Charles G. Helmick, David T. Felson, Reva C. Lawrence, Sherine Gabriel, Rosemarie Hirsch, C. Kent Kwoh, Matthew H. Liang, Hilal Maradit Kremers, Maureen D. Mayes, Peter A. Merkel, Stanley R. Pillemer, John D. Reville, and John H. Stone, for the National Arthritis Data Workgroup* ..... 15
- Estimates of the Prevalence of Arthritis and Other Rheumatic Conditions in the United States. Part II  
*Reva C. Lawrence, David T. Felson, Charles G. Helmick, Lesley M. Arnold, Hyon Choi, Richard A. Deyo, Sherine Gabriel, Rosemarie Hirsch, Marc C. Hochberg, Gene G. Hunder, Joanne M. Jordan, Jeffrey N. Katz, Hilal Maradit Kremers, and Frederick Wolfe, for the National Arthritis Data Workgroup* .... 26

## Rheumatoid Arthritis Basic Science Studies

- Antibodies Against Citrullinated Vimentin in Rheumatoid Arthritis: Higher Sensitivity and Extended Prognostic Value Concerning Future Radiographic Progression as Compared With Antibodies Against Cyclic Citrullinated Peptides  
*Linda Mathsson, Mohammed Mullazehi, Marius C. Wick, Olof Sjöberg, Ronald van Vollenhoven, Lars Klareskog, and Johan Rönnelid*..... 36
- Expression of Mucin 3 and Mucin 5AC in Arthritic Synovial Tissue  
*Michael V. Volin, Shiva Shahrara, G. Kenneth Haines, III, James M. Woods, and Alisa E. Koch*..... 46
- Differences in Synovial Tissue Infiltrates Between Anti-Cyclic Citrullinated Peptide-Positive Rheumatoid Arthritis and Anti-Cyclic Citrullinated Peptide-Negative Rheumatoid Arthritis  
*M. van Oosterhout, I. Bajema, E. W. N. Levarht, R. E. M. Toes, T. W. J. Huizinga, and J. M. van Laar*.... 53

## Rheumatoid Arthritis Clinical Studies

- Atacept in Patients With Rheumatoid Arthritis: Results of a Multicenter, Phase Ib, Double-Blind, Placebo-Controlled, Dose-Escalating, Single- and Repeated-Dose Study  
*P. P. Tak, R. M. Thurlings, C. Rossier, I. Nestorov, A. Dimic, V. Mircetic, M. Rischmueller, E. Nasonov, E. Schmidt, P. Emery, and A. Munafo* ..... 61
- Comparison of the Clinical Efficacy and Safety of Subcutaneous Versus Oral Administration of Methotrexate in Patients With Active Rheumatoid Arthritis: Results of a Six-Month, Multicenter, Randomized, Double-Blind, Controlled, Phase IV Trial  
*J. Braun, P. Kästner, P. Flaxenberg, J. Währisch, P. Hanke, W. Demary, U. von Hinüber, K. Rockwitz, W. Heitz, U. Pichlmeier, C. Guimbal-Schmolck, and A. Brandt, for the MC-MTX.6/RH Study Group* ..... 73

## Psoriatic Arthritis

- Prevalence of Malignancy in Psoriatic Arthritis  
*Sherry Rohekar, Brian D. M. Tom, Agnes Hassa, Cathy T. Schentag, Vernon T. Farewell, and Dafna D. Gladman*..... 82

## Spondylarthritis

- Maintenance of Infliximab Treatment in Ankylosing Spondylitis: Results of a One-Year Randomized Controlled Trial Comparing Systematic Versus On-Demand Treatment  
*Maxime Breban, Philippe Ravaud, Pascal Claudepierre, Gabriel Baron, Yves-Dominique Henry, Christophe Hudry, Liana Euller-Ziegler, Thao Pham, Elisabeth Solau-Gervais, Isabelle Chary-Valckenaere, Christian Marcelli, Aleth Perdriger, Xavier Le Loët, Daniel Wendling, Bruno Fautrel, Bernard Fournié, Bernard Combe, Philippe Gaudin, Sandrine Jousse, Xavier Mariette, Alain Baleyrier, Gérard Trape, and Maxime Dougados, for the French Ankylosing Spondylitis Infliximab Network* ..... 88

## Experimental Arthritis

- T Cell Dependence of Chronic Destructive Murine Arthritis Induced by Repeated Local Activation of Toll-like Receptor–Driven Pathways: Crucial Role of Both Interleukin-1 $\beta$  and Interleukin-17  
*Leo A. B. Joosten, Shahla Abdollahi-Roodsaz, Marleen Heuvelmans-Jacobs, Monique M. A. Helsen, Liduine A. M. van den Bersselaar, Birgitte Oppers-Walgreen, Marije I. Koenders, and Wim B. van den Berg*..... 98
- Differentially Regulated Expression of Growth Differentiation Factor 5 and Bone Morphogenetic Protein 7 in Articular Cartilage and Synovium in Murine Chronic Arthritis: Potential Importance for Cartilage Breakdown and Synovial Hypertrophy  
*Klaus Bobacz, Ilse-Gerlinde Sunk, Silvia Hayer, Love Amoyo, Makiyeh Tohidast-Akrad, George Kollias, Josef S. Smolen, and Georg Schett* ..... 109
- Amphipathic Weak Acid Glucocorticoid Prodrugs Remote-Loaded Into Sterically Stabilized Nanoliposomes Evaluated in Arthritic Rats and in a Beagle Dog: A Novel Approach to Treating Autoimmune Arthritis  
*Yuval Avnir, Rina Ulmansky, Veronica Wasserman, Simcha Even-Chen, Maya Broyer, Yechezkel Barenholz, and Yaakov Naparstek* ..... 119

## Osteoarthritis Clinical Studies

- Central Bone Marrow Lesions in Symptomatic Knee Osteoarthritis and Their Relationship to Anterior Cruciate Ligament Tears and Cartilage Loss  
*Gabriela Hernández-Molina, Ali Guermazi, Jingbo Niu, Daniel Gale, Joyce Goggins, Shreyasee Amin, and David T. Felson*..... 130
- Index to Ring Finger Length Ratio and the Risk of Osteoarthritis  
*W. Zhang, J. Robertson, S. Doherty, J. J. Liu, R. A. Maciewicz, K. R. Muir, and M. Doherty* ..... 137

## Osteoarthritis Basic Science Studies

- Cannabinoid-Mediated Antinociception Is Enhanced in Rat Osteoarthritic Knees  
*Niklas Schuelert and Jason J. McDougall* ..... 145
- Regional Differences in Chondrocyte Metabolism in Osteoarthritis: A Detailed Analysis by Laser Capture Microdissection  
*Naoshi Fukui, Yasuko Ikeda, Toshiyuki Ohnuki, Nobuho Tanaka, Atsuhiko Hikita, Hiroyuki Mitomi, Toshihito Mori, Takuo Juji, Yozo Katsuragawa, Seizo Yamamoto, Motoji Sawabe, Shoji Yamane, Ryuji Suzuki, Linda J. Sandell, and Takahiro Ochi* ..... 154
- Early-Onset Degeneration of the Intervertebral Disc and Vertebral End Plate in Mice Deficient in Type IX Collagen  
*Lawrence M. Boyd, William J. Richardson, Kyle D. Allen, Charlene Flahiff, Liufang Jing, Yefu Li, Jun Chen, and Lori A. Setton*..... 164
- Association of Microsomal Prostaglandin E Synthase 1 Deficiency With Impaired Fracture Healing, But Not With Bone Loss or Osteoarthritis, in Mouse Models of Skeletal Disorders  
*Kiyofumi Yamakawa, Satoru Kamekura, Naohiro Kawamura, Masatomo Saegusa, Daisuke Kamei, Makoto Murakami, Ichiro Kudo, Satoshi Uematsu, Shizuo Akira, Ung-il Chung, Kozo Nakamura, and Hiroshi Kawaguchi* ..... 172

## Cartilage Biology

- Arthritogenic Antibodies Specific for a Major Type II Collagen Triple-Helical Epitope Bind and Destabilize Cartilage Independent of Inflammation  
*Kutty Selva Nandakumar, Estelle Bajtner, Leigh Hill, Beate Böhm, Merrill J. Rowley, Harald Burkhardt, and Rikard Holmdahl*..... 184
- Engineered Cartilage Generated by Nasal Chondrocytes Is Responsive to Physical Forces Resembling Joint Loading  
*C. Candrian, D. Vonwil, A. Barbero, E. Bonacina, S. Miot, J. Farhadi, D. Wirz, S. Dickinson, A. Hollander, M. Jakob, Z. Li, M. Alini, M. Heberer, and I. Martin*..... 197
- Sphingomyelinase Decreases Type II Collagen Expression in Bovine Articular Cartilage Chondrocytes via the ERK Signaling Pathway  
*S. J. Gilbert, E. J. Blain, V. C. Duance, and D. J. Mason* ..... 209
- Interleukin-1 $\beta$  Up-Regulation of Smad7 via NF- $\kappa$ B Activation in Human Chondrocytes  
*C. Baugé, J. Attia, S. Leclercq, J.-P. Pujol, P. Galéra, and K. Boumédiène*..... 221
- Differential Requirements for IKK $\alpha$  and IKK $\beta$  in the Differentiation of Primary Human Osteoarthritic Chondrocytes  
*Eleonora Olivotto, Rosa Maria Borzi, Roberta Vitellozzi, Stefania Pagani, Annalisa Facchini, Michela Battistelli, Marianna Penzo, Xiang Li, Flavio Flamigni, Jun Li, Elisabetta Falcieri, Andrea Facchini, and Kenneth B. Marcu* ..... 227

## Bone Biology

- A Biomarker-Based Mathematical Model to Predict Bone-Forming Potency of Human Synovial and Periosteal Mesenchymal Stem Cells  
*Cosimo De Bari, Francesco Dell'Accio, Alexandra Karystinou, Pascale V. Guillot, Nicholas M. Fisk, Elena A. Jones, Dennis McGonagle, Ilyas M. Khan, Charles W. Archer, Thimios A. Mitsiadis, Ana Nora Donaldson, Frank P. Luyten, and Costantino Pitzalis* ..... 240

## Clinical Image

- Fibrodysplasia Ossificans Progressiva Seen on Three-Dimensional Computed Tomography  
*Chien-Hsueh Tung and Ning-Sheng Lai*..... 250

## Systemic Lupus Erythematosus

- Glomerular Accumulation of Plasmacytoid Dendritic Cells in Active Lupus Nephritis: Role of Interleukin-18  
*Marco Tucci, Cosima Quatraro, Lucia Lombardi, Cecilia Pellegrino, Franco Dammacco, and Franco Silvestris* ..... 251
- Association of Serum Nitrate and Nitrite Levels With Longitudinal Assessments of Disease Activity and Damage in Systemic Lupus Erythematosus and Lupus Nephritis  
*Jim C. Oates, Stephanie R. Shaftman, Sally E. Self, and Gary S. Gilkeson* ..... 263

## Autoinflammatory Disease

- Abnormal Tumor Necrosis Factor Receptor I Cell Surface Expression and NF- $\kappa$ B Activation in Tumor Necrosis Factor Receptor-Associated Periodic Syndrome  
*Belinda Nedjai, Graham A. Hitman, Nasim Yousaf, Yuti Chernajovsky, Susanna Stjernberg-Salmela, Tom Pettersson, Annamari Ranki, Philip N. Hawkins, Peter D. Arkwright, Michael F. McDermott, and Mark D. Turner*..... 273

## Systemic Sclerosis

- High N-Terminal Pro-Brain Natriuretic Peptide Levels and Low Diffusing Capacity for Carbon Monoxide as Independent Predictors of the Occurrence of Precapillary Pulmonary Arterial Hypertension in Patients with Systemic Sclerosis  
*Y. Allanore, D. Borderie, J. Avouac, D. Zerkak, C. Meune, E. Hachulla, L. Mouthon, L. Guillevin, O. Meyer, O. G. Ekindjian, S. Weber, and A. Kahan* ..... 284
- Investigation of Sensory Neurogenic Components in a Bleomycin-Induced Scleroderma Model Using Transient Receptor Potential Vanilloid 1 Receptor- and Calcitonin Gene-Related Peptide-Knockout Mice  
*Árpád Szabó, László Czirják, Zoltán Sándor, Zsuzsanna Helyes, Terézia László, Krisztián Elekes, Tamás Czömpöly, Anna Starr, Susan Brain, János Szolcsányi, and Erika Pintér* ..... 292

## Vasculitis

- Risks and Relative Risks of Wegener's Granulomatosis Among Close Relatives of Patients With the Disease  
*Ann Knight, Sven Sandin, and Johan Askling* ..... 302
- Intravenous Immunoglobulins for Relapses of Systemic Vasculitides Associated With Antineutrophil Cytoplasmic Autoantibodies: Results of a Multicenter, Prospective, Open-Label Study of Twenty-Two Patients  
*Valérie Martinez, Pascal Cohen, Christian Pagnoux, Stéphane Vinzio, Alfred Mahr, Luc Mouthon, Laurent Sailer, Claire Delaunay, Alain Sadoun, and Loïc Guillevin, for the French Vasculitis Study Group* ..... 308

## Myositis

- Uridine Supplementation Antagonizes Zidovudine-Induced Mitochondrial Myopathy and Hyperlactatemia in Mice  
*Dirk Lebrecht, Catherine Deveaud, Bertrand Beauvoit, Jacques Bonnet, Janbernd Kirschner, and Ulrich A. Walker*..... 318

## Clinical Images

- Rupture of Brodie's Abscess  
*Kyung-Su Park, Won-Jong Bahk, Chul-Soo Cho, and Ho-Youn Kim*..... 326

## Concise Communication

- Is It Safe to Readminister Tumor Necrosis Factor  $\alpha$  Antagonists Following Tuberculosis Flare?  
*Spyros Aslanidis, Athina Pырpasopoulou, Stella Douma, and Konstantinos Petidis* ..... 327

## Letters

- Associations of Churg-Strauss Syndrome With the HLA-DRB1 Locus, and Relationship to the Genetics of Antineutrophil Cytoplasmic Antibody-Associated Vasculitides: Comment on the Article by Vaglio et al  
*S. Wiczorek, B. Hellmich, W. L. Gross, and J. T. Epplen* ..... 329

Potential Effects of Cyclosporin A on Coronary Vasomotor Function in Young Patients With Systemic Lupus Erythematosus: Comment on the Article by Hirata et al <i>Cengiz Korkmaz</i> .....	330
Reply <i>Kumiko Hirata, Shunichi Homma, AnnaMaria Choy, and Chim C. Lang</i> .....	331
Marginal Efficacy of Glucosamine: Comment on the Article by Vlad et al and the Editorial by Reginster <i>Robert A. Greenwald</i> .....	332
Differing Results of Trials of Glucosamine for Pain in Arthritis: Comment on the Article by Vlad et al <i>Andrew Moore, Sheena Derry, and Henry McQuay</i> .....	332
Reply <i>Steven C. Vlad, Michael P. LaValley, David T. Felson, and Timothy E. McAlindon</i> .....	333
Reply <i>Jean-Yves Reginster</i> .....	334
<b>ACR Announcements</b> .....	A15

**Cover image:** The figure on the cover (from Boyd et al, page 168) shows histologic findings in a mouse intervertebral disc stained for type II collagen.