Rheumatology Research Highlights

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Featured Highlights:

Synergistic Activation of Inflammatory Cytokine Genes May Suggest New Therapeutic Approaches

Featuring Yu Qiao, PhD; Eugenia G. Giannopoulou, PhD; Chun Hin Chan; Sung-ho Park; Shiaoching Gong; Janice Chen; Xiaoyu Hu, MD, PhD; Olivier Elemento, PhD; Lionel B. Ivashkiv, MD

- The identification of molecular mechanisms involving chromatin that act synergistically during the inflammatory process may help reveal potential new therapies to arrest tissue damage.

Enhanced Rho-Associated Protein Kinase Activation in Patients with Systemic Lupus Erythematosus

Featuring Josephine Isgro, MD; Sanjay Gupta, PhD; Elzbieta Jacek, BA; Tanya Pavri, BA; Roland Duculan, MD; Mimi Kim, ScD; Kyriakos A. Kirou, MD, ScD; Jane E. Salmon, MD; Alessandra B. Pernis, MD

- A study that found higher levels of Rho-associated protein kinase (ROCK) in patients with systemic lupus erythematosus (SLE) versus healthy controls, suggests a potentially significant therapeutic target for the treatment of SLE

Increased Rates of Arthroplasty in Patients with SLE Seen Over a Fifteen-Year Period

Featuring Christina Mertelsmann-Voss, MD; Stephen Lyman, PhD; Ting Jung Pan, MPH; Susan Goodman, MD; Mark P. Figgie, MD; Lisa Mandl, MD MPH

- An analysis of discharge data for arthroplasty patients with systemic lupus erythematosus (SLE) compared with those who had no inflammatory or autoimmune conditions showed an almost two-fold increase in the SLE group from 1991 to 2005

DMARD Therapy Associated with More Optimistic Expectations in RA Patients Undergoing TKA

Featuring Susan M. Goodman, MD; Lisa A. Mandl, MD, MPH; Mark P. Figgie, MD; Beverly K. Johnson, MD, MS; Michael Alexiades, MD; Hassan Ghomrawi, PhD, MPH

- Rheumatoid arthritis patients on biologic DMARD therapy have more optimistic expectations about knee replacement surgery—comparable to those of osteoarthritis patients—than do RA patients not on biologics

Managing Pregnant Patients with Antiphospholipid Antibody Syndrome: Risk Stratification May Help Refine Treatment Recommendations

Featuring Michael D. Lockshin, MD

- Clinical trials based on risk stratification and long-term follow-up of infants born to mothers with APS may result in more effective management during pregnancy

Catastrophic Antiphospholipid Syndrome: Diagnosing a Rare but Highly Fatal Disease

Featuring Cassyanne L. Aguiar, MD; Doruk Erkan, MD

- A step-by-step clinical approach can address the diagnostic challenges of Catastrophic Antiphospholipid Syndrome (CAPS)

Surges in Anti-dsDNA Can Predict Severe Flares in SLE

Featuring Nancy Pan, MD; Isabelle Amigues, MD; Stephen Lyman, PhD; Roland Duculan, MD; Faisal Aziz, MD; Mary K. Crow, MD; Kyriakos A. Kirou, MD

- Rapid and substantial rises in Anti-dsDNA suggests utility of prompt close monitoring for SLE flares

Synovial Fibroblasts Modulate Macrophage Function in Joint Inflammation

Featuring Laura T. Donlin, PhD; Arundathi Jayatilleke, MD; Eugenia G. Giannopoulou, PhD; George D. Kalliolias, MD, PhD; Lionel B. Ivashkiv, MD

- Synovial fibroblast modulation of macrophage function may play a role in the pathogenesis of inflammatory arthritis

Doctors Using Excessive Medical Jargon Can Seem Unprofessional to Patients

Featuring Theodore R. Fields, MD; Anne R. Bass, MD; Juliet Aizer, MD, MPH; Stephen A. Paget, MD; Jessica Berman, MD

- Study finds clear communication matters

ADAM17 Controls Cellular Signaling in Key Process of New Bone Growth

Featuring Katherine C. Hall; Daniel Hill; Miguel Otero, PhD; Darren A. Plumb, PhD; Dara Froemel, MD; Cecilia L. Dragomir, MD; Thorsten Maretzky, PhD; Adele Boskey, PhD; Licia Selleri, MD, PhD; Mary B. Goldring, PhD; Carl P. Blobel, MD, PhD

- Mice whose cartilage cells were missing ADAM17 did not experience proper long bone growth.

iRHOM2 is a Critical Pathogenic Mediator of Inflammatory Arthritis

Featuring Priya Darshinee A. Issuree, PhD; Thorsten Maretzky, PhD; Xiaoping Qing, MD, PhD; Steven L. Swendeman, PhD; Kyung-Hyun Park-Min, MD; Nikolaus Binder, PhD; George D. Kalliolias, MD, PhD; Anna Yarilina, PhD; Lionel B. Ivashkiv, MD; Jane E. Salmon, MD; Carl P. Blobel, MD, PhD

- Selectively targeting iRHOM2 could create new therapies to treat RA with less side effects

Timely, Effective Treatment of Rheumatoid Arthritis Reduces Disability Two Years Out

Featuring Vivian P. Bykerk, MD; Pooneh Akhavan, MD, FRCPC; Edward C. Keystone, MD, FRCPC; Juan Xiong, PhD; Bindee Kuriya, MD, FRCPC, MSc; Janet E Pope, MD, MPH, FRCPC; Gilles Boire, MD, MSc; Diane Tin, BPharm; Boulos Haraoui, MD, FRCPC; Carol A. Hitchon, MD

- Delaying treatment for RA can increase chances of long-term joint damage

Enhanced ROCK Activation in Lupus

Featuring Alessandra B. Pernis, MD; Josephine Isgro, MD; Sanjay Gupta, MD; Elzbieta Jacek; Tanya Pavri; Roland Duculan, MD; Kyriakos A. Kirou, MD; Jane E. Salmon, MD

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Comparing 28 patients with lupus to 25 healthy control patients, a research team of HSS scientists and rheumatologists found that the patients with lupus had increased activity of proteins called rho-associated kinases – or ROCKs. This enhanced activity was associated with differentiation of the Th17 cells of the immune system.

In lupus, inflammation can be triggered by signals from two key cytokine messengers – interleukin 17 (IL-17) and interleukin 21 (IL-21). To produce these cytokines the body requires a transcription factor called IRF4.

The ability of IRF4 to drive cytokine production is controlled by ROCKs – which phosphorylate IRF4. Drugs that inhibit ROCK activity are already used to treat cardiovascular and other diseases. In previous studies, using lupus mice, the HSS team showed drugs that inhibit ROCKs could reduce inflammation. In this new study, using human T cells, ROCK inhibitors reduced production of IL-17 and IL-21. These results support the idea that ROCKs could be promising therapeutic targets for treating lupus.

This study was presented at the 2013 ACR Annual Meeting.

For more information about lupus treatment at HSS, see the Lupus and APS Center of Excellence.

Social Isolation Increases the Risk of Persistent Pain After Hip Replacement

Featuring Danielle Ramsden-Stein, MD; Susan M. Goodman, MD; Michael M. Alexiades, MD; Wei-Ti Huang, MS; Rebecca Zhu; Mark P. Figgie, MD; Lisa A. Mandl, MD, MPH

- Read more

Adverse Pregnancy Outcome in Lupus Pregnancies Associated with Angiogenic Factor Dysregulation

Featuring Jane E. Salmon, MD; Michael D. Lockshin, MD; Lisa R. Sammaritano, MD; Marta M. Guerra, MS

- New biomarkers could help identify pregnancies at risk in patients with lupus or aPL.

Rituximab Shown Effective for Ear, Nose, and Throat Manifestations of GPA

Featuring Lindsay S. Lally, MD; Robert Lebovics, MD; Wei-Ti Huang, MS; Robert F. Spiera, MD

- In this large study, patients treated with RTX were far less likely to have active ENT disease.

First Large Outcomes Studies to Focus on Joint Replacements for Patients with Psoriatic Arthritis

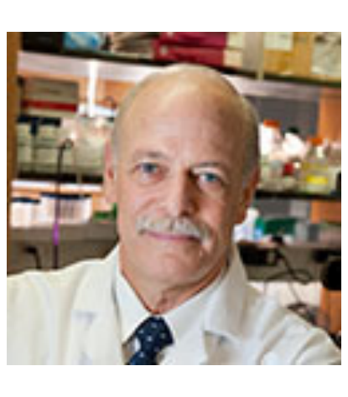
Featuring Lisa A. Mandl, MD, MPH; Rebecca Zhul; Wei-Ti Huang, MS; Michael M. Alexiades, MD; Mark P. Figgie, MD; Susan M. Goodman, MD

- Having psoriatic arthritis does not prevent good outcomes in either hip or knee replacement.

High Type I Interferon in SLE Plasma Predicts Future Renal Disease

Featuring Mikhail Olferiev, MD; Elzbieta E. Jacek; Mari Lliguicota; Margaret Robotham; Wei-Ti Huang, MS; Elena Gkrouzman, MD; Mary K. Crow, MD; Kyriakos A. Kirou, MD, DSc

- Monitoring IFN-I activity in SLE plasma could help predict future disease activity, particularly involving the kidney.



New Discovery in Bone: The Protein Netrin1 is Required for Osteoclast Differentiation

Featuring P. Edward Purdue, PhD; Steven R. Goldring, MD

- Netrin1 may be a novel therapeutic target to prevent bone loss leading to loosening of joint replacements in osteolysis.

Stimulating Cholinergic Neurotransmitter Receptors Modulates Inflammation in Lupus

Featuring Milena Vukelic, MD; Xiaoping Qing, MD, PhD; Patricia Redecha; Gloria Koo, PhD; Jane E. Salmon, MD

- New therapies stimulating neurotransmitters may be able to reduce inflammation.

The Effect of Statin Therapy on the Risk of Blood Clots After Hip or Knee Arthroplasty

Featuring Yuo-Yu Lee; Stephen Lyman, PhD; Geoffrey H. Westrich, MD; Brian F. Gage, MD, MSc; Anne R. Bass, MD

- Statins shown to protect against PE although not total VTE following hip or knee replacement.

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