This Week in Rheumatology - 2024-11-17

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Other Rheumatic Diseases

Recent research in other rheumatic diseases has shed light on several important aspects of these conditions. One study reviewed the impact of B-cell-directed therapy on severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) vaccine immunity, particularly in patients with autoimmune inflammatory rheumatic diseases (AIIRD). The findings suggest that B-cell depletion can significantly affect the immune response to the vaccine, highlighting the need for tailored vaccination strategies in these patients. Another study focused on primary antiphospholipid syndrome (PAPS) and found that antiphospholipid-specific B cells persist through the memory and long-lived plasma cell stages, likely due to defective germinal center selection. This persistence of self-reactive B cells could contribute to the chronic nature of PAPS and the associated autoimmune phenomena. Lastly, a retrospective cohort study from Israel revealed that patients with dermatomyositis and polymyositis have a higher risk of pulmonary embolism, with anti-phospholipid antibodies acting as a potentiator of thrombosis. These findings underscore the complex interplay between autoimmune processes and thrombotic events in these conditions, emphasizing the importance of comprehensive management strategies to address both aspects.

References

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- Increased risk of pulmonary embolism in patients with dermatomyositis/polymyositis, a retrospective cohort study from Israel. by Amster R, Watad A, Shani U, McGonagle D, Cohen AD, Amital H, Ben-Shabat N. Thrombosis research. PMID: 39515188

Infectious Diseases

Recent research has focused on the long-term impacts of coronavirus disease 2019 (COVID-19), particularly in individuals with systemic autoimmune rheumatic diseases. Srivatsan and Patel (2023) highlight that this population is at a higher risk of developing COVID-19 infection, complications from acute infection, and possibly post-acute sequelae of COVID-19 (PASC). The study underscores the need for tailored management strategies and ongoing monitoring for these patients to mitigate the potential long-term health consequences of the disease.

References

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Rheumatoid Arthritis

Recent research in rheumatoid arthritis (RA) has shed light on various aspects of the disease, including its pathogenesis, treatment, and assessment. One study suggests that not all RA patients have a preceding symptomatic at-risk phase, which may impact the scope of preventive interventions. Another study highlights the importance of noncoding RNAs (ncRNAs) in changing immune and inflammatory pathways, such as the WNT signaling pathway, and their potential as therapeutic targets. Clinical trials have shown that both baricitinib and abatacept are effective in reducing disease activity in RA patients, with baricitinib demonstrating potential advantages in early disease control. Hand and wrist deformities in RA patients have been studied, with a focus on pathogenesis, assessment, and outcome measures. A meta-epidemiological study has shown that SDAI-LDA is associated with more structural damage over 2 years than any of the definitions of remission in patients with established RA, highlighting the importance of finding the right balance between remission and low disease activity as treatment targets.

References

- Is rheumatoid arthritis always preceded by a symptomatic at-risk phase of arthralgia? by Claassen S, Boeren AMP, Khidir SJH, van Steenbergen HW, van der Helm-van Mil AHM. RMD open. PMID: 39537206
- Noncoding RNAs in rheumatoid arthritis: modulators of the NF-kappaB signaling pathway and therapeutic implications. by Seyedi D, Espandar N, Hojatizadeh M, Mohammadi Y, Sadri F, Rezaei Z. Frontiers in immunology. PMID: 39530095
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- Assessment of Progressive Hand and Wrist Deformities in the Rheumatoid Patient. by Lim JX, Chung KC. Hand clinics. PMID: 39521587
- Outcome Assessments for the Rheumatoid Hand. by Stjernberg-Salmela S, Ryhanen J. Hand clinics. PMID: 39521585
- Remission versus low disease activity as treatment targets in rheumatoid arthritis: how to strike the right balance between too strict and too lenient targets? A meta-epidemiological study of individual patient data. by Duarte C, Jacobs JWG, Ferreira RJO, Welsing PMJ, Gossec L, Machado PM, van der Heijde D, da Silva JAP. RMD open. PMID: 39516011

Ankylosing Spondylitis

Summary

References

 Efficacy and safety of upadacitinib in patients with active ankylosing spondylitis refractory to biologic therapy: 2-year clinical and radiographic results from the open-label extension of the SELECT-AXIS 2 study. by Baraliakos X, van der Heijde D, Sieper J, Inman RD, Kameda H, Maksymowych WP, Lagunes-Galindo I, Bu X, Wung P, Kato K, Shmagel A, Deodhar A. Arthritis research & therapy. PMID: 39533349

Immunology

Recent research in Immunology has focused on the quantification of autoantibodies, which play a crucial role in autoimmune diseases, including autoimmune interstitial lung disease (ILD). A novel method, known as LIPS

(Luminescent ImmunoPrecipitation System), has been developed to measure autoantibodies in patients with autoimmune ILD. This method has shown remarkable accuracy and sensitivity in detecting these biomarkers, outperforming traditional methods. The ability to precisely quantify autoantibodies using LIPS could significantly enhance the diagnosis and treatment of autoimmune ILD, leading to better patient outcomes and a deeper understanding of the disease mechanisms.

References

 Quantification of autoantibodies using a luminescent profiling method in autoimmune interstitial lung disease. by Burbelo PD, Huapaya JA, Khavandgar Z, Beach M, Pinal-Fernandez I, Mammen AL, Chiorini JA, Noroozi Farhadi P, Miller FW, Schiffenbauer A, Sarkar K, Warner BM, Rider LG. Frontiers in immunology. PMID: 39524452

Systemic Lupus Erythematosus

Recent research in Systemic Lupus Erythematosus (SLE) has focused on optimizing immunosuppressive therapies and understanding the pathogenic mechanisms driven by memory B cells. A comparative study of voclosporin-based triple immunosuppressive therapy and high-dose glucocorticoid (GC)-based therapy revealed that voclosporin-based therapy resulted in fewer adverse events (AEs) and more rapid and significant reductions in proteinuria over the first 6 months of treatment. This suggests that voclosporin could be a more effective and safer alternative to high-dose GCs in managing SLE. In parallel, emerging evidence highlights the dysfunctional nature of memory B cells in SLE. These cells exhibit hyporesponsiveness to B cell receptor (BCR) signaling but remain responsive to Toll-like receptor (TLR) and type I interferon signaling, as well as T cell-mediated activation. Chronic exposure to immune complexes of ribonucleoprotein (RNP)-specific autoantibodies and TLR-engaging cargo contributes to a partially anergic phenotype, which can fuel a positive feedforward loop, leading to the expansion of anti-RNP autoantibodies. Clinical trials have shown that the replenishment of memory B cells is associated with SLE relapse, and the hyporesponsiveness of these cells to non-depleting B cell-targeting approaches may explain the limited efficacy of such treatments. Targeting dysfunctional memory B cells specifically, rather than broad-spectrum B cell and plasma cell subsets, could offer a more effective and safer therapeutic strategy in SLE, aligning with the promising results seen with voclosporin-based therapy.

References

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Osteoarthritis

Recent advancements in the treatment of osteoarthritis have focused on the development of controlled stimulusresponsive delivery systems. These systems are designed to release therapeutic agents in response to specific stimuli, either endogenous (such as pH, enzymes, or temperature) or exogenous (such as light, magnetic fields, or ultrasound). The paper by Ye et al. (2023) highlights the progress in this area, emphasizing the potential of these delivery systems to improve the efficacy and reduce the side effects of osteoarthritis treatments. By leveraging the unique properties of these stimuli, researchers have been able to create more targeted and controlled drug delivery methods, which could significantly enhance the management of osteoarthritis and improve patient outcomes.

References

• Controlled Stimulus-Responsive Delivery Systems for Osteoarthritis Treatment. by Ye Q, Zhang M, Li S, Liu W, Xu C, Li Y, Xie R. International journal of molecular sciences. PMID: 39519350

Biologics

The South African Rheumatism and Arthritis Association (SARAA) has published 2024 guidelines for the use of biologic and targeted synthetic disease-modifying antirheumatic drugs (b/tsDMARDs) in the treatment of immune-mediated inflammatory rheumatic diseases. These guidelines recommend that b/tsDMARDs, which target specific pathways of the immune system, should be prescribed by a rheumatologist after conventional synthetic disease-modifying antirheumatic drug (csDMARD) therapy has failed. The choice of b/tsDMARD is influenced by the patient's disease profile, comorbidities, and preferences, as well as the registered indications and associated risks of the drugs. To ensure patient safety and effective monitoring, all patients receiving b/tsDMARDs must be included in the SARAA biologic registry. Additionally, healthcare providers must remain vigilant for adverse events, particularly infections, which are a significant concern with these therapies.

References

 South African Rheumatism and Arthritis Association 2024 guidelines for the use of biologic and targeted synthetic disease-modifying antirheumatic drugs. by Van Duuren E, Potts J, Brijlal U, Botha S, Didi S, Makan K, Van Dam M, Chinniah K, Hodkinson B. South African medical journal = Suid-Afrikaanse tydskrif vir geneeskunde. PMID: 39513242

Gout

Recent research in gout has focused on both the development and management of the condition. A 5-year prospective cohort study aims to investigate whether ultrasound imaging evidence of monosodium urate (MSU) crystal deposition can predict the development of symptomatic gout in individuals with asymptomatic hyperuricemia and elevated serum urate levels (≥8 mg/dL). This study, involving a diverse group of international researchers, seeks to provide valuable insights into the early stages of gout and potentially identify individuals at higher risk for the disease. In parallel, significant advances have been made in the treatment of hyperuricemia and gout, particularly in the context of co-morbid conditions such as chronic kidney disease (CKD), hypertension, coronary vascular disease, and the metabolic syndrome. These co-morbidities complicate gout management, necessitating a comprehensive approach that addresses both the acute flares and long-term serum urate (sUA) reduction. New and existing therapies have shown promising results, and their integration into clinical practice is expected to improve outcomes for patients with gout, especially those with multiple co-morbidities.

References

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