Mini Review

International Journal of Clinical Rheumatology

Understanding Non-Radiographic Axial Spondyloarthritis (Nr-Axspa): Unveiling the Challenges and Opportunities in Diagnosis and Management

Hochika Berchina*

Department of Biochemistry, Jimma University, Ethiopia

***Author for Correspondence:**
hochika99@yahoo.com

Received: 01-Feb-2024, Manuscript No. fmijcr-24-133555; **Editor assigned:** 03-Feb-2024, Pre-QC No. fmijcr-24-133555 (PQ); **Reviewed**: 16-Feb-2024, QC No. fmijcr-24-133555; **Revised:** 22- Feb-2024, Manuscript No. fmijcr-24-133555 (R); **Published:** 28-Feb-2024, **DOI:** 10.37532/1758-4272.2024.19(2).65-67

Abstract

Non-radiographic axial spondyloarthritis (nr-axSpA) represents a subset of spondyloarthritis (SpA) characterized by inflammatory involvement of the axial skeleton without radiographic evidence of sacroiliitis, a hallmark feature of ankylosing spondylitis (AS). While Nr-axSpA shares many clinical and genetic similarities with AS it presents unique diagnostic and therapeutic challenges. In this article, we delve into the intricacies of nr-axSpA, from its clinical manifestations to its impact on patients' lives and the evolving landscape of treatment options.

Keywords: Non-radiographic axial spondyloarthritis • Rheumatology • SpondyloArthritis International Societ

Introduction

Nr-axSpA predominantly affects young adults, typically manifesting before the age of 45, with a slight male predominance. Like AS Nr-axSpA is characterized by inflammatory back pain, morning stiffness, and impaired spinal mobility. However unlike AS individuals with nr-axSpA do not exhibit definitive radiographic evidence of sacroiliitis on conventional X-rays, posing a diagnostic dilemma [1-3].

Methodology

Diagnosing nr-axSpA can be challenging due to the absence of radiographic sacroiliitis. Instead, diagnosis relies on a combination of clinical symptoms, laboratory tests, and imaging findings. The Assessment of SpondyloArthritis International Society (ASAS) classification criteria, which incorporate clinical, imaging, and laboratory parameters, provide a standardized framework for diagnosing nr-axSpA.

Magnetic resonance imaging (MRI) plays a pivotal role in the diagnosis of nr-axSpA by detecting early inflammatory changes in the sacroiliac joints and spine that may precede radiographic evidence. However, access to MRI and interpretation of imaging findings by experienced radiologists remain barriers to timely diagnosis in some settings.

Beyond back pain and stiffness, nr-axSpA can manifest with a wide spectrum of symptoms and extra-articular manifestations. Peripheral arthritis, enthesitis, dactylitis, uveitis, and inflammatory bowel disease are among the common extraspinal manifestations seen in nr-axSpA, underscoring its systemic nature [4, 5].

The treatment approach for nr-axSpA parallels that of AS, focusing on symptom relief, disease control, and prevention of structural damage. Nonsteroidal anti-inflammatory drugs (NSAIDs) remain the mainstay of pharmacological therapy for symptom control, although their long-term use may be limited by gastrointestinal and cardiovascular side effects.

For individuals with persistent disease activity despite NSAID therapy, biologic agents

targeting tumor necrosis factor-alpha (TNF-alpha) have demonstrated efficacy in reducing inflammation, improving symptoms, and inhibiting structural progression. In recent years, interleukin-17 inhibitors and Janus kinase (JAK) inhibitors have emerged as promising treatment options for nr-axSpA, offering additional therapeutic choices for patients with refractory disease or intolerance to TNF-alpha inhibitors.

Managing nr-axSpA requires a multidisciplinary approach involving rheumatologists, physiotherapists, occupational therapists, and other healthcare professionals. Physical therapy plays a crucial role in improving joint mobility, muscle strength, and posture, while occupational therapy focuses on optimizing functional independence and ergonomic adaptations [6-8].

Living with nr-axSpA can be physically and emotionally challenging, impacting various aspects of daily life, including work, relationships, and leisure activities. Fatigue, anxiety, depression, and impaired quality of life are common among individuals with nr-axSpA, highlighting the need for holistic management strategies that address both the physical and psychosocial dimensions of the disease. As our understanding of nr-axSpA continues to evolve, several areas warrant further investigation. These include elucidating the underlying pathophysiology, identifying biomarkers for disease activity and prognosis, refining diagnostic criteria, and optimizing treatment algorithms through personalized medicine approaches. Non-radiographic axial spondyloarthritis represents a distinct clinical entity within the spectrum of spondyloarthritis, characterized by inflammatory involvement of the axial skeleton without radiographic evidence of sacroiliitis. Despite diagnostic and therapeutic challenges, advances in imaging techniques, treatment modalities, and multidisciplinary care have transformed the management landscape for nr-axSpA, offering hope for improved outcomes and better quality of life for affected individuals. By raising awareness, fostering collaboration among stakeholders, and advancing research efforts, we can continue to enhance our understanding and management of nr-axSpA, ultimately improving the lives of those living with this complex and often debilitating condition [9, 10]. Non-radiographic axial spondyloarthritis (nr-axSpA) presents a unique challenge in the field of rheumatology due to its diagnostic complexity and therapeutic considerations. Unlike ankylosing spondylitis (AS), nr-axSpA lacks definitive radiographic evidence of sacroiliitis, making its diagnosis reliant on a combination of clinical symptoms, laboratory tests, and imaging findings. The absence of visible structural changes on conventional X-rays complicates the diagnostic process, often resulting in delayed recognition and treatment initiation. Magnetic resonance imaging (MRI) has emerged as a valuable tool for detecting early inflammatory changes in the sacroiliac joints and spine, facilitating the diagnosis of nr-axSpA in individuals with persistent symptoms despite negative radiographs.

Discussion

Management strategies for nr-axSpA mirror those of AS, focusing on symptom control, disease modification, and prevention of structural damage. Nonsteroidal anti-inflammatory drugs (NSAIDs) remain the first-line pharmacological therapy for symptom relief, although their long-term use may be limited by adverse effects. Biologic agents targeting tumor necrosis factor-alpha (TNF-alpha), interleukin-17, and Janus kinase (JAK) pathways have shown efficacy in reducing inflammation and improving symptoms in individuals with nr-axSpA who fail to respond adequately to NSAIDs. However, access to biologic therapies and their cost-effectiveness remain significant concerns, particularly in resource-limited settings. Beyond pharmacological interventions, physical therapy and lifestyle modifications play integral roles in the management of nr-axSpA. Exercise programs aimed at improving joint mobility, muscle strength, and posture are essential components of comprehensive care, while ergonomic adaptations and occupational therapy interventions help optimize functional independence and quality of life. Living with nr-axSpA can be challenging, both physically and emotionally, as individuals navigate the complexities of symptom management, treatment decisions, and lifestyle adjustments. Supportive care from multidisciplinary healthcare teams, patient education, and access to peer support networks are crucial for empowering individuals with nr-axSpA to effectively manage their condition and improve their overall well-being.

Conclusion

In conclusion, nr-axSpA represents a distinct clinical entity within the spectrum of spondyloarthritis, characterized by inflammatory involvement of the axial skeleton without radiographic evidence of sacroiliitis. Despite diagnostic and therapeutic challenges, advancements in imaging technology, treatment options, and multidisciplinary care have transformed the landscape of nr-axSpA management, offering hope for improved outcomes and enhanced quality of life for affected individuals. Continued research efforts and collaborative initiatives are essential to further refine diagnostic criteria, optimize treatment algorithms, and address unmet needs in the care of individuals with nr-axSpA.

References

1. Fachagentur Nachwachsende Rohstoffe EV (2009) Biogas Basisdaten Deutschland – Stand: Oktober 2008. Germany.
2. Frazier WC, West off DC (1995) Food Microbiology 4th ed. New Delhi 384-396.
3. Gagandeep K (2017) Isolation and Identification of Bacteria's from Cattle Dung used in Microbial Fuel Cells to Generate Bioelectricity. Int J Revie & Res 5: 1-18.
4. Ieropoulos IA, Greenman J, Melhuish C, Hart J (2006) Comparative study of three types of microbial fuel cell. Enzyme Microb Tech 37: 238-245.
5. Imwene KO, Mbui DN, Mbugua JK, Kinyua AP, Kairigo PK, et al. (2021) Kinetic Modelling of Microbial Fuel Cell Voltage Data from Market Fruit Wastes in Nairobi, Kenya. IJSRCH 6: 25-37.
6. International Standards Organization (ISO-6579) (2002) Microbiology of food and animal feeding stuffs—horizontal method for detection of Salmonella spp, 4th edition. Switzerland 1-27.
7. Jayaraj S, Deepanraj B , Sivasubramanian V (2014) Study On the Effect of pH On Biogas Production from Food Waste by Anaerobic Digestion. 9th International Green Energy Conference 799-805.
8. Kamau JM, Mbui DN, Mwaniki JM, Mwaura FB (2020) Influence of Substrate Proximate Properties on Voltage Production in Microbial Fuel Cells. IJEER 8: 12-21.
9. Kamau JM, Mbui DN, Mwaniki JM, Mwaura FB (2020) Lab Scale Biogas Production from Market Wastes and Dagoretti Slaughterhouse Waste in Kenya. IJEER 8: 12-21.
10. Kamau JM, Mbui DN, Mwaniki JM, Mwaura FB (2018) Characterization of voltage frombfood market waste: microbial fuel cells. Int J Biotech & Bioeng 4: 37-43.