

## The Role of Sedimentation Rate in Monitoring Disease Progression in Ankylosing Spondylitis

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### ABOUT THE STUDY

Ankylosing Spondylitis (AS) is a chronic inflammatory rheumatic disease primarily affecting the axial skeleton, leading to pain, stiffness, and potentially, structural damage. Monitoring disease progression in AS is crucial for timely intervention and effective management. Various clinical and laboratory parameters are employed for this purpose, and one such indicator is the Erythrocyte Sedimentation Rate (ESR).

### Understanding ankylosing spondylitis

Ankylosing Spondylitis is a form of inflammatory arthritis that primarily affects the spine and sacroiliac joints. Over time, chronic inflammation can lead to structural damage, causing fusion of the vertebrae and reduced spinal mobility. Early diagnosis and monitoring are vital to prevent irreversible damage and improve patient outcomes.

### Role of sedimentation rate

Sedimentation rate, also known as Erythrocyte Sedimentation Rate (ESR), is a blood test that measures the rate at which red blood cells settle in a tube over a specific period. Elevated ESR levels are indicative of inflammation in the body, making it a valuable tool in assessing disease activity in inflammatory conditions like Ankylosing Spondylitis.

### ESR as an inflammatory marker

Inflammation is a hallmark of Ankylosing Spondylitis, and monitoring inflammatory markers is crucial for disease management. ESR is a nonspecific marker of inflammation, reflecting the presence of inflammatory proteins in the blood. Elevated ESR levels are commonly observed in AS patients during active disease phases, indicating ongoing inflammation in the joints and surrounding tissues.

### Correlation between ESR and disease activity

Several studies have demonstrated a correlation between elevated ESR levels and disease activity in Ankylosing Spondylitis. A systematic review and meta-analysis published in the *Journal of Rheumatology* found a significant association between higher ESR

levels and increased disease activity scores in AS patients. Monitoring ESR levels over time can provide valuable insights into the overall inflammatory burden and help guide treatment decisions.

### Limitations and considerations

While ESR is a useful tool in monitoring disease progression in Ankylosing Spondylitis, it has certain limitations. ESR is a nonspecific marker and can be elevated in various inflammatory conditions, making it less specific to AS. Additionally, some AS patients may not exhibit consistently elevated ESR levels, highlighting the need for a comprehensive approach that includes clinical assessments, imaging, and other laboratory markers.

### Integration with clinical assessments and imaging

To obtain a comprehensive understanding of disease progression in Ankylosing Spondylitis, ESR should be integrated with clinical assessments and imaging studies. Clinical assessments, including the Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) and the Ankylosing Spondylitis Disease Activity Score (ASDAS), provide a holistic view of disease activity. Imaging modalities such as Magnetic Resonance Imaging (MRI) and X-rays offer insights into structural damage, which may not be reflected in inflammatory markers alone.

### Treatment implications

Monitoring ESR levels in Ankylosing Spondylitis has practical implications for treatment decisions. A decrease in ESR levels over time may indicate a positive response to therapy, guiding the rheumatologist in adjusting or maintaining the current treatment regimen. Conversely, persistently elevated ESR levels may signal inadequate disease control, prompting a reassessment of the treatment plan. Sedimentation rate, as a marker of inflammation, plays a significant role in monitoring disease progression in Ankylosing Spondylitis. While it has limitations, integrating ESR with clinical assessments and imaging studies provides a comprehensive approach to evaluating disease activity. Regular monitoring of ESR levels allows healthcare professionals to make informed decisions regarding treatment strategies, ultimately improving outcomes for individuals with Ankylosing Spondylitis.

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