

ROLE OF MAGNETIC RESONANCE IMAGING IN THE DISCONTINUATION OF TREATMENT OF NON-TUBERCULOUS BACTERIAL SPONDYLODISCITIS IN ADULT PATIENTS

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• **Introduction & Aim**

The duration of antibiotic treatment for non-tuberculous bacterial spondylodiscitis in adults should not be less than 6 weeks (3 months or more for extensive infections or resistant organisms, IDSA guidelines¹). One study (Bernard et al²) demonstrated the non-inferiority of 6 vs. 12 weeks of treatment in bacterial spondylodiscitis of known etiology, but with a low prevalence of MRSA (6%) and paravertebral abscesses (19%). Magnetic resonance imaging (MRI), the method of choice for early diagnosis, carries a risk of overestimating the inflammatory process during follow-up due to the delay in imaging improvement³⁻⁵. The objective of the study is to evaluate the additional contribution of early MRI (before 3 months from the start of therapy) in determining treatment discontinuation.

• **Methods**

This is a retrospective study of all adult patients admitted to the Infectious Diseases Outpatient Clinic of the ASST Papa Giovanni XXIII in Bergamo diagnosed with non-tuberculous bacterial spondylodiscitis between 2020 and 2024. For each patient, the etiology, duration of antibiotic therapy and the number of medications, MRI performed before discontinuing therapy, time to radiological improvement, and disease recurrence after a follow-up of at least one year after discontinuing therapy were assessed. The duration of treatment was at the discretion of the specialist.

• **Results**

From January 1st, 2020, to December 31st, 2024, 180 cases of non-tuberculous bacterial spondylodiscitis were followed (tab.1-2).

Characteristics	N.
Male (%)	134 (74%)
Average age, years (range)	65 (32-89)
Site of involvement (%)	
•Cervical	•20 (11%)
•Thoracic	•41 (23%)
•Lumbar	•102 (57%)
•Multiple	•17 (9%)
Number of disks involved (%)	
•1	•133 (74%)
•2	•31 (17%)
•3 or more	•16 (9%)

Table 1.

Etiology	N. (%)
Unkwown	48 (27%)
S.aureus	65 (36%)
•S.aureus methicillin-sensitive	•53 (82%)
•S.aureus methicillin-resistant	•12 (18%)
Coagulase-negative Staphylococci (CoNS)	10 (6%)
•CoNS methicillin-sensitive	•5 (50%)
•CoNS methicillin-resistant	•5 (50%)
Gram-negative bacilli	15 (8%)
Streptococci	19 (11%)

Table 2.

The median (IQR) duration of antibiotic treatment was 12.5 (12-14) weeks. Follow-up MRI was performed in 128 patients (71%) before discontinuing therapy, with confirmation of radiological improvement in 99 (77%). On average, 16 weeks were required before imaging improvement was achieved. MRI was performed within 12 weeks in 31%, with improvement in 24%. Only 95 patients (53%) discontinued treatment within 12 weeks. Among these, 56 (59%) underwent MRI before discontinuing therapy, with improvement in 43 patients (77%) (tab. 3).

RMI timing	N. (%)
Performed before discontinuing therapy	128 (71%)
Improved before discontinuing therapy	99 (77%)
Performed within 12 weeks	56 (31%)
Improved within 12 weeks	43 (24%)

Table 3.

The overall relapse rate upon discontinuation was 5.6% (10 subjects).

• **Conclusions**

Discontinuation of treatment depends on clinical, etiological, laboratory, and instrumental considerations. Due to the delay in imaging improvement, clinical judgment should prevail in the timing of discontinuation.

Bibliography
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