Interdisciplinary Clinical Algorithm for Treatment of Infectious Spondylitis - A Retrospective Evaluation of 90 Patients

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Introduction: Infectious spondylitis is rare, but a more frequently occurring disease. Unspecific symptoms lead to a delay in diagnosis. Complexity of the illness demands an interdisciplinary approach in diagnostics and treatment which varies from hospital to hospital. General applicable recommendations are not available.

Method: Data were investigated from 90 patients (37 female, 53 male, mean age: 63.5 years) at the orthopaedic and trauma department of our hospital from 2004-2009: patient-related data, risk factors, clinical, radiological and laboratory data and information of diagnostic and therapeutic measures. Mean follow-up was 11.7 months. Retrospective results were investigated for failure in diagnostic and clinical treatment. Documented risk factors included diabetes, immunosuppression, end stage renal failure, alcohol, drug abuse, prior spine surgery and BMI.

Results: 82 patients suffered from back pain, 22 patients presented with fever. Neurological deficits were present in 29 patients. Lumbar spine infection had highest prevalence. Bone and disc affection was double to muscular and epidural. CRP was elevated in 80 patients, WBC in 25 patients. MRI detected spondylitis in 80 cases. Blood cultures were taken in 23 cases, pathogen were detected in 44%. CT-guided biopsies were taken in 23 patients, bacterial infection was proven in 30%. Open biopsies were conducted in 63 patients, bacterial infection occurred in 67%. A causative organism could be identified in 39. Pathogen distribution was according to literature. Gram-positive cocci were responsible for majority of infections. Cardiac-ultrasound was performed in 29 patients. Endocarditis was detected in 3. Mean hospital time was 30 days. 21 patients underwent conservative treatment, 69 patients surgical. Instrumentation was done in 52 cases. Surgical revision was necessary in 25 patients. 30 patients were lost to follow-up. Successful treatment resulted in 54 of 60 patients.

Conclusion: The results show severe flaws in treatment of infectious spondylitis and demonstrate a fundamental need for an interdisciplinary approach to serve our patients best. A standard clinical algorithm based on retrospective results was developed for optimal treatment according to current literature. A guideline for the decision between conservative or open treatment is included as well as for diagnostics and treatment. The simple-to-use algorithm is further used to gain prospective data on treatment and clinical outcome. It may be used as general recommendation for treatment of infectious spondylitis. First results of the established procedure seem to be very promising. Prospective investigation is under way.