

Staphylococcal toxins (entotoxins A,B,C,TSST-1) in synovial fluid of patients with arthritis

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Back ground &Objective: Determination the etiologic causes in septic arthritis is very important. Goal of study was searching the staphylococcal entotoxinsA, B, C and Toxic Shock Staphylococcal toxin-1 in synovial fluid of patients with arthritis

Methods & materials: A cross sectional study done in pediatric and orthopedic ward of Rasoul hospital in Tehran; Iran (2008-2010). Gram stain; conventional culture; direct detection of soluble bacterial antigens (H.influ; S. pneumonia, group B streptococci, and N.meningitidis) by Latex particle agglutination tests;Staphylococcal supper antigens (Enzymeimmune assay) upon synovial fluid of 62 cases (5 months-16 years; mean =11 ± 3.8 years). P value < 0.05 considered statistically significant.

Positive culture (n=11) included: S.Aureus 4; S.pneumonia 5; H.influ 1, Klebsiella 1 .10% of cases had positive gram stain;4 cases had positive Latex particle agglutination tests. Staphylococcal arthritis diagnosed in 7 (39%) of cases upon positive culture or positive gram stain in synovial fluid .The most common type of supper antigens was TSST-1(47%) ;entotoxinsB(18%) was the less common type. Isolation of S.Aureus(positive culture) was related to presence of entotoxinsA in synovial fluid but not for entotoxins B, C and TSST-1.

Conclusion: S.Aureus has a prominent role in arthritis. 47% of cases with negative culture for S.aureus had at least 1 type of Staphylococcal supper antigens in synovial fluid. Failure of isolation S.aureus and other organisms might due to natural ungrowth of organism; previous antibiotic usage or low technical methods for isolation .Use of methods for searching the antigens of usual organisms, or staphylococcal supper antigens could helpful for treatment .

Key Words: Arthritis; Septic Arthritis;Staphylococcal supper antigens; Staphylococcal Entotoxins (A, B, C), TSST-1 (Toxic Shock Staphylococcal toxin).

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