TREATMENT OF SEPTIC ARTHRITIS WITH THE COMBINATION OF CEFTRIAXONE + SULBACTUM + EDTA (SULBACTOMAX) IN THE CURRENT SCENARIO OF RESISTANCE A CASE REPORT.

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Summary

Microorganisms have been implicated as the cause of many rheumatic diseases. In most chronic joint disorders, including rheumatoid arthritis, there is no evidence that infectious agents are directly involved. However, we now recognize the important role of microbes in many types of acute and chronic arthritis. We report an a case of septic arthritis caused by injecting drug user due to staphylococcus in a 37yr old man. An empirical therapy with Ceftriaxone+Sulbactum+EDTA combination after an initial failure of Vancomycin to *Staphylococus aureus* caused septic arthritis and with prompt and close cooperation with the microbiology service to optimize his antimicrobial therapy he had achieved clinical cure. Management is growing in complexity with the advent of novel and antibiotic resistant causative microorganisms and within the current climate of increased immunosuppression.

Key Words: Ceftriaxone, Sulbactum, EDTA (Ethylene- diamine- tetra- acetic acid), *Staphylococcus aureus,* Septic arthiritis

Introduction

Septic arthritis is an orthopedic emergency requiring prompt treatment with joint lavage and debridement in combination with antimicrobial therapy.[1] During the past two decades, septic arthritis have emerged as important example of infectious disease. There has also been greater evidence to support a causal role for various microbes in forms of arthritis that have traditionally been classified as "reactive". However, the most important cause of septic arthritis continues to be acute bacterial arthritis. Staphylococci are the most common organisms that cause bacterial arthritis in adults.[2,3] In three recent large series, *Staphylococcus aureus* was the primary cause of bacterial arthritis in 40% of cases from England and Wales,[4] 56% of cases from France,[5] and 37% of cases from tropical Australia[6] (panel 1). *S aureus* cause 80% of joint infections in patients with concurrent rheumatoid arthritis and in those with diabetes. This microbe is also the primary pathogen in hip infections and in polyarticular septic arthritis. S aureus elaborate several extracellular and cell-mediated factors that may be important virulence determinants in septic arthritis.[7,8]

Case Report

A 37-year-old injecting drug user presented with signs and symptoms of septic arthritis. *Staphylococcus aureus* was grown from his blood cultures. Despite treatment with Vancomycin 30mg/Kg IV daily in two divided doses , his condition continued to deteriorate. Echocardiography showed no signs of endocarditis.. Antibiotic was changed to Sulbactomax. Before altering the antibiotic therapy (800 ml) of the pus was drained from the right thigh and the pus culture also revealed *staphylococcus* after 48hrs of incubation, The sensitivity reports showed higher sensitivity to Ceftriaxone+Sulbactum+EDTA combination comparatively along with other drugs laid for antimicrobial sensitivity test. His condition improved gradually and he was subsequently transferred to a drug rehabilitation unit after completing his antibiotic course.

Discussion

There is no current guideline for diagnosis and or treatment of septic arthritis [9]. And if a septic arthritis if suspected should be immediately treated with an empiric antibiotic therapy and should not be delayed for culture test. In our case the causative organism in the blood was identified as *Staphylococus aureus* which is a gram-positive bacteria hence treatment with Vancomycin 30mg/Kg IV daily in two divided doses was initiated. However by no reasons his condition continued to detoriate. The antibiotic treatment was switched over to another broad spectrum antibiotic a combination of Ceftriaxone+Sulbactum+EDTA it was observed that even before the pus culture report revealed *Staphylococus aureus* the patient recovered tremendrously within 24hrs of Ceftriaxone+Sulbactum+EDTA treatment . The antibiotic susceptablity profiles were done by using standard disk diffusion method recommended by NCCLS. *Staphylococus aureus* in the pus was moderately sensitive to cefazolin, ceftazidime, cefpirome, piperacillin-tazobactum, flucloxacillin and fusidic acid. and highly sensitive to Ceftriaxone+Sulbactum+EDTA. It was resistant to vancomycin, amoxicillin-clavulanic acid, piperacillin, cefotaxime, amikacin, netilmicin and cefoperazone-Sulbactum. The failure of Vancomycin treatment for *Staphylococus aureus* eventhough Vancomycin is effective against gram positive organisms could be only due to the resistance developed to the drug and this is evident when the antibiotic was shifted to Ceftriaxone+Sulbactum+EDTA. More over WC Noble et al., have also reported that Vancomycin [10] is resistant to *Sytaphylococus aureus*. Eventhough the treating physician has diagnosed and treated appropriately the resistance shown by the organism could be the main factor for Vancomycin to be ineffective against gram positive organism. This resistance developed to Vancomycin is not known by most of the physicians. Hence the treating physician should also be aware of the local resistance patterns of the drugs to treat septic arthritis effectively.

Conclusion

Septic arthritis is a serious condition which may become life threatening, if not appropriately diagnosed and treated. Definitive diagnosis treatment guidelines are lacking and antibiotic resistance is developing. Keeping in mind of both the above factors appropriate treatment with empiric antibiotics and the local resistance patterns not only septic artritis but all other infection which requires treatment should be carefully dealed by the treating physician. We emphasize Ceftriaxone+Sulbactum+EDTA combination to be best choice for an empirical treatment in the current senario of antibiotic resistance.

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