Ceftriaxone Workshop: Overview and Conclusion

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The purpose of this workshop was to improve knowledge of the use of third-generation cephalosporins in the treatment of severe infections.

Scheld gave an excellent concise overview of the third-generation cephalosporins in clinical practice and summarized the principal findings from the recent literature. He also pointed to some aspects which are still controversial and where more data is needed to assist the physician in his difficult task of further improving treatment for patients in need of antimicrobial therapy and thereby minimizing morbidity and mortality due to bacterial infections.

Ferencz et al. studied ceftriaxone versus cefotaxime in the treatment of adult septicemia. In the judgment of the authors, ceftriaxone (although only given once daily) appeared to be superior to cefotaxime (given 3 times daily). Bacterial infections caused 3 deaths in the ceftriaxone group and 5 deaths in the cefotaxime group. The systemic tolerance of both regimens was excellent. Bucaneve et al. compared ceftriaxone with imipenem/cilastatin as empirical monotherapy for infections in cancer pa-

tients. The overall response rate (patients improved) was 86% with ceftriaxone and 79% with imipenem/cilastatin. These data support the efficacy of ceftriaxone as monotherapy for febrile episodes in immunocompromised patients.

Liu and Wang demonstrated that ceftriaxone plus amikacin, ceftazidime plus amikacin and imipenem plus cilastatin were equally effective as empiric therapy for febrile granulocytopenic patients. An early clinical evaluation after 72 h of therapy showed that all patients responded favourably to the initial empiric treatment. The combination of ceftriaxone plus amikacin offered the advantage of being cost-effective and convenient to administer.

Mercader et al. reported on the use of once-daily ceftriaxone in the treatment of bacterial infections in cirrhotic patients. A favourable response was seen in 90% of these critically ill patients.

Pfister et al. conducted a prospective randomized trial to study ceftriaxone versus cefotaxime for acute neurological manifestations in Lyme borreliosis. In spite of the fact that the maximum levels of ceftriaxone in the cerebrospinal fluid

42

Hell

100%
 Sepsis
 Meningitis
 Respiratory tract infection
 Genitourinary infection
 Bone/skin infection
 Sexually transmitted disease
 Prophylaxis
 Miscellaneous

Fig. 1. Ceftriaxone (■) versus reference antibiotics (EH) in 17,197 patients: success rates in various indications [1].

were significantly higher than the maximum cefotaxime levels, the authors were not able to demonstrate noticeable clinical differences between daily treatment with once 2 g ceftriaxone and 3 times 2 g cefotaxime.

Soriano and the Spanish study group evaluated single daily dose ceftriaxone treatment in 125 patients with microbio-logically proven severe bacteremia. In 36% of these patients the bacteremia was nosocomially acquired. 84.8% of the patients recovered completely. Therefore, ceftriaxone was regarded by the authors as a useful treatment for severe bacteremic infections. Barradas et al. compared the efficacy of 2-gram doses of ceftriaxone and cefotaxime in bacterial pneumonia. They found a statistically significant difference [90.5% versus 73.7% ($p < 0.05$)] in favour of ceftriaxone, in spite of the fact that ceftriaxone was administered once daily and cefotaxime 3 times daily.

In conclusion, seven papers were presented during the workshop, reporting on the results obtained with the third-generation cephalosporin ceftriaxone in the once-daily treatment of severe infections.

A wide variety of indications was dealt with, including septicemia, febrile episodes in cancer patients, bacterial infections in cirrhotic patients, nosocomial pneumonia and acute neurological manifestations in Lyme borreliosis. The reference drugs were cefotaxime, imipenem plus cilastatin and ceftazidime plus amikacin, given 3–4 times daily.

Overall, the investigators judged ceftriaxone given once daily to be well tolerated and at least as effective as the reference drugs given in multiple daily doses. These results are in accordance with those published to date on the basis of worldwide clinical experience with patients treated with ceftriaxone (fig. 1) [1].

Reference

Hell K: Worldwide clinical experience with ceftriaxone. *Chemotherapy* 1989;35:228–235.