Correspondence

I  567

HB Nijmegen, The Netherlands.

Medical Microbiology, University Hospital Nijmegen, P.O. Box 9 1  OK 6500

1058— 4838/95/2006— 0023S02.00

(AMIC, <  1  mg/L), meropenem  (MIC, <  0.5 m g/L), and cipro-

floxaein (MIC, <  1  m g/L).

5. Donnelly JP. Horrevorts AM, Sauerwein RW. De Pauw BK. Migli-

dose

A 7-year-old boy with acute lymphoblastic leukemia that was
diagnosed in May 1986 had been in remission after receiving
chemotherapy. The disease relapsed in his testis in June 1993;
orchidectomy was performed and reinduction therapy was
started. During therapy the patient developed a sore throat and
high fever; he was treated initially with amoxicillin and later
with ceftazidime. Throat cultures yielded E. cloacae, which was
susceptible to ceftazidime. Fecal cultures 1 week later also
yielded E. cloacae. After recovery the patient was sent home
with oral ciprofloxacin (15 mg/[kg •  d]) for selective gut decon-
tamination before his next cycle of chemotherapy. One month
later he was admitted with headache, seizures, and hemianopia,
but he did not have a fever or a history of trauma. Physical
examination revealed increased intracranial pressure with papil-
ledema.

The patient’s WBC count was 6.9 × 10^9/L, and the erythro-
cyte sedimentation rate was 92 mm/h. Examination of CSF dis-
closed pleocytosis with a WBC count of 32/mm^3 and a protein
level of 130 mg/dL; gram staining was negative. CT of the head
revealed a large mass process in the left occipital region, which
suggested lymphoma or an abscess. Because surgery was not
considered to be urgent, empirical therapy was started with
ceftazidime (100 mg/kg), amphotericin B (1 mg/kg), and amoxi-
cillin (100 mg/kg). After 14 days without improvement in the
patient’s condition, a diagnostic puncture of the cerebral lesion
revealed an abscess. Gram stains showed many leukocytes but
no microorganisms. After 3 days, broth cultures yielded a m ulti-
ple-resistant Enterobacter cloacae.

Because of the reported neurotoxicity of imipenem/cilastatin
[4], we requested a supply of meropenem from Zeneca Pharma-
ceuticals on a compassionate-use basis. Meropenem  was given
intravenously at a dose of 1.5 g thrice daily (120 mg/kg) for 6
weeks. Within 1 week the headache subsided and the patient
recovered. No side effects were noted. At the end of treatment
the patient was clinically and radiologically cured.

Our patient was colonized with E. cloacae before the cerebral
abscess developed. We speculate that an unrecognized bacter-
emia from the throat or the intestine might have seeded the
brain. Cefazidime therapy may have contributed to induction of
β-lactamase and multiple resistance. Alternative agents to
treat infections by β-lactamase-producing Enterobacter species
include imipenem-cilastatin, ciprofloxacin, aminoglycosides
(amikacin), and trimethoprim-sulfamethoxazole. However,
these agents are not suitable for use in children with cerebral
infections because of side effects [4] and because sufficiently
high concentrations can not be reliably achieved in brain tissue.

Meropenem , a new carbapenem with comparable activity to
that of imipenem/cilastatin, has been reported to be useful in
the treatment of meningitis in adults [5, 6] and children [7] and
does not show neurotoxicity. Meropenem  is not hydrolyzed by
repressed chromosomal β-lactamases of E. cloacae and is there-
fore a suitable alternative therapy for infections by multiply-
resistant organisms that are difficult to treat.

Jacques F. G. M. Meis, Jacqueline Groot-Loonen,
and Jacomina A. A. Hoogkamp-Korstanje

Departments of Medical Microbiology and Pediatrics. University Hospital
Nijmegen, Nijmegen, The Netherlands

References

1. Jadavji T. Humphreys RP, Prober CG. Brain abscesses in infants and

2. Quinn JP, DiVincenzo CA, Fuster J. Emergence of resistance to ceftazi-
dime during therapy for Enterobacter cloacae infections. J Infect Dis

3. Heusser MF, Patterson JE, Kurtiza AP, Edberg SC, Baltimore RS. Emer-
gence of resistance to multiple beta-lactams in Enterobacter cloacae
during treatment for neonatal meningitis with cefotaxime. Pediatr In-

4. Wong VK, Weigh JT, Ross LA, Mason WH, Inferred CB, Kim KS.
Imipenem-cilastatin treatment of bacterial meningitis in children. Pe-

5. Donnelly JP, Horlevorts AM, Sauerwein RW, De Pauw BE. High-dose
meropenem in meningitis due to Pseudomonas aeruginosa [letter].

6. Chmelik V, Gutwirth J. Meropenem treatment of post-traumatic meningi-
tis due to Pseudomonas aeruginosa [letter]. J Antimicrob Chemother

7. Lopez G. Meropenem Study Group. Meropenem versus cefotaxime or
ceftaxime for bacterial meningitis [abstract 638]. In: Program and
abstracts of the 33rd Interscience Conference on Antimicrobial
Society for Microbiology 1993:236.