Aspergillus peritonitis in peritoneal dialysis

Sir,

In his Editorial to our article 'Aspergillus peritonitis in peritoneal dialysis: case report and a review of the literature' by B. C. Tanis, C. A. Verburgh, J. W. van’t Wout and J. W. van der Pijl (NDT 1995; 10: 1240–1243) Dr H. K. Geiss raises several points of criticism that we would like to respond to.

Dr Geiss argues that the patient had no risk factors for 'systemic' fungal infection. We believe that the term 'systemic' is misleading and should not be used. Our patient did not have risk factors for invasive pulmonary or disseminated aspergillosis, but was predisposed to local invasive Aspergillus peritonitis because of the obvious disruption of the anatomical barrier and the fact that there is evidence that peritoneal macrophages in patients on CAPD are impaired in their function [1]. Normally, Aspergillus hyphae are killed by granulocytes and macrophages through various complicated mechanisms and not simply by intracellular killing [2].

We agree with Dr Geiss that fungal infection in our patient was not fully proven, and in fact we stated this clearly in the article. However, we do not agree that 'serodiagnosis is an absolute must' in view of the low sensitivity of the available tests as argued in the editorial by Dr Geiss himself and in the standard textbook of infectious diseases that Dr Geiss is referring to, where it is stated that '...tests for detection of circulating antigen in patients with invasive aspergillosis lack sufficient sensitivity to be clinically useful' [3]. Furthermore it is not 'astonishing' that the microscopic investigation in our patient did not reveal any mycelial forms, since this investigation was negative in nine of the 10 cases that we reviewed.

Unfortunately, even nowadays clinicians are forced to start empirical antifungal therapy in a number of clinical situations because of the many difficulties in making a definite diagnosis of invasive fungal infection. Until better diagnostic tools are available, we believe that we should continue to do so, thereby realizing that we are treating patients for suspected rather than for proven infections.

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Acyclovir-associated encephalopathy in haemodialysis

Sir,

He consulted a dermatologist and initiated treatment with oral acyclovir 800 mg/4 h receiving a cumulative dose of 9.6 g in 56 h. The patient developed progressive confusion, hallucinations, and tremor. At admission to the hospital the temperature was 37°C and neurological examination was unremarkable. On the day after dialysis laboratory data showed haemoglobin 7.1 g/dl, WBC 3100/mm³ with normal differential count and platelets 232 000/mm³. Serum sodium was 135 mmol/l, potassium 3.9 mmol/l, calcium 2.1 mmol/l, phosphate 1.3 mmol/l, magnesium 1.2 mmol/l, urea 32.1 mmol/l, and glucose 8.8 mmol/l. The transaminases were normal. Acyclovir-associated encephalopathy was considered the explanation most likely for the neurological picture, the drug was discontinued and acute haemodialysis was performed. After the first haemodialysis session there was rapid recovery from the neurological symptoms, and on the second day after the second haemodialysis session, neurological recovery was complete. The patient was discharged from the hospital 48 h after admission.

Although immunocompromised patients are at risk of dissemination of the herpes zoster infection into the central nervous system [2], in this patient the development of acyclovir-related encephalopathy was obvious. Oral acyclovir is administered at 800 mg every 4 h. The half-life is 2.5 h, but it increases to 25 h in anuria [3] and only about 1000 mg should be given every 24 h. The dosage after haemodialysis consists of the anuria-adjusted dose plus the supplementary dose, adding up to 1500 mg to obtain effective levels. Therefore this patient received more than six times the normal dose, and despite the relatively poor absorption of acyclovir from the intestinal tract (about 20%) toxicity occurred. The mechanism of acyclovir-associated encephalopathy is unknown although a dose relationship has been suggested [4].

However, some case reports have demonstrated that encephalopathy may occur within a wide range of plasma acyclovir levels [1]. The dissociation between plasma acyclovir levels, cerebrospinal fluid acyclovir concentrations, and neurological symptoms suggests accumulation of the drug in the central nervous system. Although this severe side-effect is most frequently encountered during intravenous treatment [5,6], this case illustrates that severe intoxication may also occur with oral overdosage, and that effective elimination of acyclovir and rapid recovery of encephalopathy can be achieved by early institution of daily haemodialysis.

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References


