1444 Nosocomial sepsis caused by *Pandoraea pnomenusa* highly resistant to meropenem but sensitive to imipenem in two oncology patients.

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Introduction

Pandoraea has recently been described as a novel genus closely related to Burkholderia cepacia-complex (1). *Pandoraea*, a gram-negative rod, grows slowly on MacConkey agar, is oxidase and katalase positive and is motile. Glucose is sometimes weakly oxidized. D-xylose, mannitol, lactose, maltose and sucrose are not oxidized (2, 3). Two patients with *Pandoraea pnomenusa* sepsis are described, both strains showed dissociated carbapenem resistance.

Case descriptions

The first patient with osteosarcoma of the leg presented with multiple positive blood cultures during a 3-week period. The *Pandoraea* isolate was multiresistant (table 1). Although antibiotic treatment was changed to imipenem, blood cultures remained positive until the removal of the venous access port, which was culture-positive. The second patient with acute lymphatic leukaemia had positive blood cultures on two subsequent days, but this patient was not seriously ill and received no antibiotics.

Identification of *Pandoraea pnomenusa*

Definitive identification was performed by 16s sequencing before the results of phenotypical interpretation were available (the article of Daneshvar (3) was not yet published at the time the abstract was submitted).

The isolated strain, a gram-negative rod (figure 1), grew slowly on MacConkey and blood agar. It had a typical ground odour (the strain of second patient was recognized immediately by it's growth pattern and typical odour). Acid formation from glucose (using Hugh and Leifson and Kings OF medium) and glycerol were negative in contrast to the strains described by Daneshvar (3), other reactions (see below) were identical. There was growth on SS-agar, growth at 42˚C, no haemolysis on bloodagar, but oxidase, catalase, motility, nitrate, ureum and citrate were positive. The strains were negative for hydrolysis of esculin, gelatin, indol, ONPG, arginine dihydrolase, lysine and ornithine decarboxylase. There was no acid production from xylose, sorbitol, melibiose, arabinose, mannitol, lactose, sucrose, maltose, salicin, adonitol, inositol and rhamnose.

Results of sensitivity testing *P. pnomenusa* strains

Antimicrobial agent	MIC (mg/l) AZG n=2	ref 3 n=4
Amoxicillin	>256	>64
Amox+clavulanic acid	**0.75**	**>32**
Piperacillin	>256	nt
Piper+tazobactam	8	nt
Cefuroxim	24	nt
Cefoxitin	96	>32
Cefotaxime	>32	>64
Ceftazidime	>256	nt
Imipenem	**0.5**	**<1**
Meropenem	**>32**	**>32**
Cefpirome	64	nt
Gentamicin	>256	>16
Tobramycin	>256	>16
Ciprofloxacin	0.5	4
Sparfloxacin	0.25	1
Chloramphenicol	4	16
Tetracycline	4	4

Epidemiologic investigation

Because both patients were treated on the same ward shortly after each other, a common source of infection was strongly suspected. Strains of both patients showed identical resistance patterns and were identical by RAPD DNA typing. Both patients were treated with methotrexate, but two different batches were used. Cultures of possible sources for *Pandoraea* such as methotrexate, heparine, and desinfectans were negative as were cultures from the first patient of the throat, rectum, urine and amputation wound, making person-to person transmission unlikely.

1) Coenye T et al. Int J Syst Evol Microbiol. 2000 Mar;50 Pt 2:887-99.
2) Henry DA et al. J Clin Microbiol. 2001 Mar;39(3):1073-8.
3) Daneshvar et al. J Clin Microbiol. 2001 May;39(5):1819-26,
4) Zaharatos et al. J Clin Microbiol 2001 may; 39:2037-38

Conclusions and discussion

Pandoraea pnomenusa has recently been recognized as a pathogenic species. Of the four *P. pnomenusa* strains described by Daneshvar three were obtained from positive blood cultures and one from sputum. Our strains were also isolated from blood samples. Although a common source for *P. pnomenusa* in both patients was most likely, it was not found. The biochemical profile and resistance pattern (table I) were identical for both *Pandoraea* strains as described previously except for the negative glucose (3).

The resistance pattern seems to be typical for *Pandoraea* (table 1). In contrast to the strains described by Daneshvar, our strains were sensitive to a combination of amoxycillin and clavulanic acid and piperacillin and tazobactam. TEM, SHV, OXA and CTX beta-lactamases were not identified by PCR.

The dissociated resistance to imipenem and meropenem has led to clinical problems because only imipenem is routinely tested in our laboratory. This discordant susceptibility pattern for carbapenem has also been described for *Methylobacterium* species (4), which is not related to *Pandoraea*.

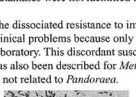

fig 1a. gram stain of *P. pnomenusa*.

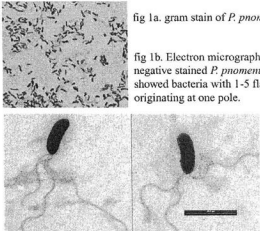

fig 1b. Electron micrograph of negative stained *P. pnomenusa* showed bacteria with 1-5 flagella originating at one pole.