Letters to the Editor

Enterococcal Bacteremia in Cancer Patients

To the Editor:

Enterococci are emerging pathogens in cancer patients with neutropenic fever.[1] The increasing incidence of enterococcal infection may, in part, reflect prophylaxis with quinolones and empirical therapy with third-generation cephalosporins, as both antimicrobials have weak or no activity against enterococci.[2,3] As part of the national survey of enterococcal bacteremia in Slovakia (January 1, 1997-January 1, 2000), we collected 132 cases of enterococcal bacteremia, including 59 patients (45%) with cancer as the underlying disease; 55 were due to *Enterococcus faecalis* and 4 to *E faecium*. All *E faecium* isolates were *van*-resistant exhibiting the *van*-B phenotype (minimum inhibitory concentration, 16-32 µg/mL). These patients had received quinolone prophylaxis and were pretreated with third-generation cephalosporins, and 2 of 4 had received imipenem or vancomycin (empirically).

We compared characteristics of the 59 enterococcal bacteremia patients with cancer and the 73 patients without cancer, and found that enterococci from the cancer patients were significantly more likely to be resistant to ampicillin, vancomycin, and teicoplanin but were less likely to be resistant to co-trimoxazole or tetracycline (Table). We also found, not unexpectedly, that the cancer patients were significantly more likely to have had prior antibiotic therapy, neutropenia, and chemotherapy, all factors that may contribute to the resistance patterns seen. Mortality was comparable in both groups (33%-34%).

Our findings suggest that, among cancer patients at high risk of enterococcal bacteremia (eg, those with prolonged neutropenia pretreated with quinolones, cephalosporins, and carbapenems), resistance to multiple antimicrobials may appear. Therefore, their initial coverage should consist of a combination of anti-enterococcal antimicrobial agents such as piperacillin and gentamicin. If *van* resistance appears, quinupristin-dalfopristin or chloramphenicol should be added.

TABLE
ENTEROCOCCAL BACTEREMIA IN CANCER VERSUS NON-CANCER PATIENTS

		C		D		C vs D
Characteristics	**Total**	**Cancer**	**%**	**Non-Cancer**	**%**	***P***
No. of patients	132	59		73		
Microbiology						
Enterococcus faecalis	117	54	91.5	63	86.3	NS
Enterococcus faecium	12	5	8.5	7	9.6	NS
Enterococcus gallinarum	3	0	0.0	3	4.1	NS
AMP-resistance	34	24	40.7	10	13.7	.0009
GEN-resistance	29	12	20.3	17	23.3	NS
VAN-resistance	9	8	13.6	1	1.4	.0107
TET-resistance	40	6	10.2	34	46.6	<.0001
CMP-resistance	5	4	6.8	1	1.4	NS
COT-resistance	44	10	16.9	34	46.6	.0007
TEI-resistance	7	7	11.9	0	0.0	.0029
Clinical characteristics						
1 positive BC	45	19	32.2	26	35.6	NS
2 positive BC	58	26	44.1	32	43.8	NS
≥3 positive BC	29	13	22.0	16	21.9	NS
Other body sites	31	11	18.6	20	27.4	NS
Vascular catheter infection	16	6	10.2	10	13.7	NS
Wound infection	3	0	0.0	3	4.1	NS
Urinary tract infection	13	6	10.2	13	17.8	NS
Risk factors						
Vascular catheter	104	42	71.2	62	84.9	NS
Dialysis	8	0	0.0	8	11.0	.0085
Low birth weight neonate	13	0	0.0	13	17.8	.0018
Ventilatory support	35	6	10.2	29	39.7	.0003
Surgery	57	16	27.1	41	56.2	.0015
Corticosteroid therapy	12	7	11.9	5	6.8	NS
Neutropenia	38	38	64.4	0	0.0	<.0001
Antineoplastic chemotherapy	48	48	81.4	0	0.0	<.0001
Urinary tract surgery	3	0	0.0	3	4.1	NS
GI surgery	22	6	10.2	16	21.9	NS
Burns or decubiti	8	1	1.7	7	9.6	NS
Diabetes	12	4	6.8	8	11.0	NS
Prior antibiotic therapy	89	59	100.0	30	41.1	<.0001
Prior prophylaxis	33	16	27.1	17	23.3	NS
Outcomes						
Endocarditis	23	4	6.8	19	26.0	.0076
Liver abscess	4	0	0.0	4	5.5	NS
Lung abscess	10	3	5.1	7	9.6	NS
Cured	88	39	66.1	49	67.1	NS
Died	44	20	33.9	24	32.9	NS

Abbreviations: AMP, ampicillin; BC, blood culture; CMP, chloramphenicol; COT, co-trimoxazole; GEN, gentamicin; GI, gastrointestinal; NS, not significant; TEI, teicoplanin; TET, tetracycline; VAN, vancomycin.

REFERENCES

1. Goosen SH. Clinical epidemiology of glycopeptide-resistant enterococci in Europe. In: Brun-Buisson C, Eliopoulos G, Leclerq R, eds. *Bacterial Resistance to Glycopeptides.* Flammarion, Paris, France: Medicine Sciences; 1998.
2. Edmond MB, Ober JF, Weinbaum DL, Pfaller MA, Hwang TG, Sanford MD. Vancomycin resistant *Enterococcus faecium* bacteremia: risk factors for infection. *Clin Infect Dis* 1995;20:1126-1133.
3. Garbutt JM, Veertrapragda M, Littenberg B, Mundy L. Association between resistance to vancomycin and death in cases of *Enterococcus faecium* bacteremia. *Clin Infect Dis* 2000;30:466-472.

E. Bilíková, MSc
J. Hanzen, MD
I. Svetlansky, PhD
M. Lisková, MD, PhD
A. Roidová, MD
V. Krcméry, MD, FACP
University of Trnava
Bratislava, Slovakia