

Prevalence studies of vancomycin-resistant enterococci for monitoring a passive surveillance program in a pediatric hospital

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Abstract. The objective of the present study was to check the impact of a program of passive surveillance of stool colonization by vancomycin-resistant enterococci (VRE) by using biannual studies of colonization prevalence in the whole hospital (September 3, 2002, $N=344$ patients and June 29, 2004, $N=368$ patients). Rectal swabs were obtained and immediately cultured on bile-esculine azide agar plates with 6 $\mu\text{g/ml}$ of vancomycin. A trend in increase in colonization was observed in our hospital between 2002 and 2004. An increasing number of VRE infections have been recorded during 2004 but most of them were acquired outside of the hospital. Moreover, the diversity of clones showed a low trend of spreading of VRE inside the hospital, suggesting the good effect of control procedures. However, as prevalence studies also allowed us to control the spreading of VRE by means of isolation or cohorting patients, and VRE infections are growing in number in Argentina (Red WHONET Argentina, 2003), we propose to do them yearly. © 2005 Published by Elsevier B.V.

Keywords: Vancomycin resistance; Enterococcus; Surveillance; Colonization

1. Introduction

Vancomycin-resistant enterococci (VRE) were firstly found in Europe in 1987 [1,2]. Almost 10 years later, they were isolated for first time in Argentina [3] and their frequency, both as infecting organisms and as colonizers, grew up steadily.

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Active surveillance demonstrated reduction in the incidence of VRE bacteremia [4]. However, it is difficult to perform in a large tertiary care hospital with high frequency of patients coming from other hospitals.

As the low number of colonized patients and no infections due to VRE were recorded before 2002, a program of passive surveillance for VRE was implemented in the Hospital de Pediatría “Prof. Dr. Juan P. Garrahan”:

- Prevalence studies in sites where colonized patients are hospitalized
- Surveillance cultures performed on swabs from previously colonized patients coming back to the hospital (identified by our database) and to patients coming from hospitals with high prevalence of VRE
- Recovering VRE from modified Skirrow medium used for isolation of *Campylobacter* spp. in stool cultures of children with diarrhea
- Vancomycin susceptibility testing of all enterococci isolated in the microbiology laboratory.

The objective of the present study was to check the impact of this program by using biannual studies of colonization prevalence in the whole hospital, as opposed to previous studies which is limited to intensive care areas (Table 1).

2. Materials and methods

All patients hospitalized in the selected days (September 3, 2002 and June 29, 2004), except those assisted at day-care rooms, were included. Patients that refused the study were excluded.

Rectal swabs were obtained and immediately cultured on bile–esculine azide agar plates with 6 µg/ml of vancomycin. After 24–48 h at 35 ± 1 °C, black colonies were identified at species level by conventional tests [5].

Table 1
Prevalence studies performed at the Hospital de Pediatría “Prof. Dr. Juan P. Garrahan” 1997–2004

Year	Studied patients	Excluded patients	Number of colonized patients	% of colonization
1997 ^a	100	0	0	0
Jun 1998 ^a	158	0	0	0
Sep 1998 ^a	97	0	0	0
1999 ^a	69	0	0	0
2000 ^a	79	0	1	1.3
Sep 2001 ^a	81	0	4	4.9
Oct 2001 ^a	94	0	6	6.4
Nov 2001 ^a	29	1	1	3.5
2002	345	1	17	4.9 ^b
2004	369	1	23	6.2 ^b

^a Only selected rooms were included.

^b Chi square $p > 0.05$.

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