

Sparfloxacin and clinafloxacin were the most active agents against ciprofloxacin-susceptible *E. faecium* strains (Table 2). Pefloxacin, however, was the least active agent, yielding an MIC<sub>90</sub> value of 16 mg/L. If, again, a breakpoint of 1 mg/L is applied, none of the strains was susceptible to pefloxacin. Norfloxacin and ofloxacin also showed very low activity against these strains. For ciprofloxacin-resistant *E. faecium* strains, all the quinolones showed MIC<sub>50</sub> values lower than those observed against ciprofloxacin-resistant *E. faecalis* strains. In terms of MIC<sub>90</sub> clinafloxacin was again the most active fluoroquinolone against ciprofloxacin-resistant *E. faecium* strains, 42% and 51% of these strains were inhibited by 1 mg/L of sparfloxacin and clinafloxacin, respectively.

The high in vitro activity of clinafloxacin against enterococci has been described [6,7]. Nevertheless, the MIC<sub>90</sub> values obtained in this study are greater than those obtained in previous studies, suggesting a slow decrease in the susceptibility of enterococci to this agent. The other new quinolones, levofloxacin, sparfloxacin and trovafloxacin, did not improve on the results obtained with clinafloxacin.

In summary, clinafloxacin, and to a lesser extent sparfloxacin, levofloxacin and trovafloxacin, showed greater in vitro activity than the classical fluoroquinolones against enterococci. Taking into account the few therapeutic alternatives for infections caused by multiresistant strains, further experimental studies will be needed to determine if these new fluoroquinolones will be useful in the treatment of serious enterococcal infections caused by strains resistant to other antibiotics.

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#### Usefulness of delayed hypersensitivity skin tests in HIV infected patients

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The demands on the health services by patients infected with type 1 human immunodeficiency virus (HIV-1) are increasing markedly. In Spain, past or present intravenous drug users account for a significant proportion of the total infected individuals [1]. Their visits to doctors are random and do not fit into defined patterns.

In this context, it is extremely important to obtain objective data which may help in the evaluation of their serologic, diagnostic and clinical status. Delayed hypersensitivity skin tests provide a very important diagnostic tool for assessing cellular immunity and several authors have advocated their use in clinical practice at the initial evaluation [2,3]. At the same time, lymphocyte CD4 counts have become widely accepted as an indicator when assigning a prophylactic or therapeutic regimen and in establishing life-expectancy [4,5]. This indicator has gained universal currency with the publication of the latest CDC criteria for staging and clinical categorization [6].

The objective of the present work is to evaluate the response to a skin test consisting of five bacterial and two fungal antigens (Ag) in a sample of HIV-1 infected individuals at their first visit to the doctor and to establish its relation to the CD4 lymphocyte count.

Between October 1985 and March 1993 we studied a total of 503 individuals with risk factors who presented for clinical evaluation at the University Clinical Hospital of Valladolid. Their average age was 29 ± 7 years (range:

16–74) and 72% were males. Ninety-two per cent of these subjects had a history of past or present intravenous drug use. A cutaneous skin test was performed in all the patients at the beginning of the study with Multitest IMC (Institut Mérieux, Lyon), which includes *Clostridium tetani*, *Corynebacterium diphtheriae*, *Streptococcus* group C, *Mycobacterium tuberculosis*, *Proteus mirabilis*, *Candida albicans* and *Trichophyton mentagrophytes*, and it was read 48–72 h later. We also obtained an absolute CD4 lymphocyte count on peripheral blood. The Multitest response was classified as 'normal' when there was frank response to more than two antigens, 'partial' if there was response to one or two antigens, and 'anergic' when no reactivity or reactivity below control level (glycerin) was found. The chi-squared statistical test was used for making comparisons.

**Table 1** Relationship between cutaneous Multitest and CD4 lymphocyte count

Response to cutaneous Multitest	No.	CD4 lymphocytes/mm <sup>3</sup>	
		<200	≥200
Normal/Partial	329	20	309
Anergic	174	21	153
Total	503	41	462

Abnormal or partial responses to Multitest IMC were seen in 329 patients and 174 were anergic. Table 1 shows these data categorized according to the total CD4 lymphocyte count. We found that in anergic patients the relative risk of having a CD4 count <200/mm<sup>3</sup> was 1.985 (95% CI: 1.107–3.561,  $p < 0.02$ ). There was no significant difference in terms of CD4 count between normal and partial responders. We chose this 'cut-off' according to CD4 cell category (subgroup 3) in the CDC classification. This important association (delayed hypersensitivity testing with CD4) should be clinically useful in HIV+ intravenous drug users, particularly in developing countries which do not have easy access to CD4 count monitoring. It seems clear that viral load is the most useful marker of disease progression.

Our data are in line with those often found in clinical studies [3,7] and support the utilization of rapid tests in clinical practice. In our experience the cutaneous Multitest is a valuable alternative in the context of initial clinical evaluation, offering a good correlation with CD4 circulating levels, because of its low cost and easy application. In our practice with a large proportion of intravenous drug users who are HIV infected, the practical importance of delayed hypersensitivity testing

is twofold. First, these patients are infrequent clinic attenders and also have difficult venous access; skin testing may partly help to overcome this difficulty. Second, there is an increasing problem of tuberculosis in these patients; multiple skin tests are helpful in assessing the value of Mantoux testing. One important difficulty remains: ensuring that the reading of the skin tests is homogeneous. Ideally, we should determine the inter-observer variation ( $\kappa$ -coefficient); more studies are necessary in order to control the information bias derived from the interpretation carried out by several observers.

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