Letters to the Editor

Home-Computer Program for Analysis of Antimicrobial Susceptibility Results

Since our paper (1) was published, we have received many requests for the program for analyzing antimicrobial susceptibility results. In view of its demand, we found it appropriate to modify our program so that it could be used by more workers, including those who do not own IBM-compatible microcomputers.

The new program was written in dBASE II (Ashton-Tate, Culver City, Calif.) command files by using an Apple II+ microcomputer with 64-kilobyte random-access memory and twin floppy-disk drives and a Z80 coprocessor. It was designed so that it could also be run by the dBASE III (Ashton-Tate) commercial data base package with minor modifications. It has functions similar to those of the previous program (1) but differs as follows. (i) The dBASE II or dBASE III commercial data base package is required for running the program. (ii) The program is menu driven and easy to use, but the user must have knowledge of dBASE II or dBASE III to use it. (iii) Since the program was written in dBASE II command files by using an Apple II+ microcomputer, program execution is slower than with the compiled program described previously (1) but would be faster if a microcomputer with a built-in hard disk was used. (iv) Geometric mean MICs cannot be calculated, since dBASE II does not have the exponential mathematical function. (v) Listings of the different command files will be provided for interested readers on request, so that the program can be run on any microcomputer and the format of the printouts can be modified as required.

LITERATURE CITED

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Immunological Response to Clostridium botulinum Toxin

In the July 1987 issue of the Journal of Clinical Microbiology, Dezfulian, Bitar, and Bartlett published the results of their kinetics study of immunological response to Clostridium botulinum toxin (1). Using an in vitro test (a double-antibody sandwich enzyme-linked immunosorbent assay), they could first detect serum antibody to toxin A not earlier than 2 weeks after the second dose of pentavalent (A, B, C, D, and E) botulinum toxoid. No antibody was detected by using the mouse neutralization assay until 7 weeks after the third dose of the toxoid.

It seems to us that the antibody response of the 40-year-old volunteer immunized by the authors was remarkably weak.

In 1976, we vaccinated two groups of persons aged 19 to 52 years with a combined vaccine containing aluminum-hydroxide-absorbed botulinum toxoid types A, B, and E and cholera (Inaba and Ogawa) vaccine (2). Botulinum toxoids were purified by ammonium sulfate precipitation and Sephadex G-100 or DEAE chromatography. Purity of the type A and B toxoids was 120 to 400 BU/mg of protein nitrogen. One dose contained 2 BU of type A toxoid, 1 BU of type B and E toxoids, and 10⁶ Vibrio cholerae cells each of the Ogawa and Inaba serotypes.

Overall, 54 persons were vaccinated with three doses of the combined vaccine by deep subcutaneous injection, with a 42-day interval between the first and the second dose and a 74- to 169-day interval between the second and third doses. Botulinum antitoxin was determined by using the neutralization test on white mice with toxin dose levels of L+/100 for types A and E antitoxin and L+/1,000 for type B antitoxin.

Botulinum antitoxin was not detectable 42 days after the first injection (Fig. 1 in reference 2). A quite significant response was, however, recorded 21 days after the second dose. The geometrical means for type A antitoxin were 0.03 IU/ml for group 1 and 0.18 IU/ml for group 2; all persons had at least 0.01 IU/ml. For 2 to 5 months after the second injection, no clear-cut changes in antitoxin concentration were observed. The third dose of vaccine stimulated a clear booster response with a geometric mean antitoxin level of above 1 IU/ml for type A. One year after the third dose, in 11 persons of group 1 still available for the study the concentration of A antitoxin was still higher than 0.01 IU/ml. In general, the response to botulinum toxoid was similar to the response to tetanus toxoid.

Analysis of antitoxin antibody activity with different immunoglobulin classes showed that 21 days after the third dose the whole antibody activity was contained in the immunoglobulin G (Fig. 2 in reference 2).

The discrepancies between our results and those of Dez-