Intermittent Bacteraemia

Pages with reference to book, From 108 To 109

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Abstract

Twenty-six cases suspected of bacterial endocarditis were studied. Main infecting organisms were staphylococcus and streptococci. Bateraemia was intermittent and first and third culture gave maximum positive results (JPMA 33 : 108,1983).

Introduction

In most forms of bacteremia blood stream invasion is intermittent in nature, because the microorganisms are cleared rapidly from the circulation by reticuloendotheial system by intra and extra vascular polymorphonuclear leucocytes and macrophages. These mechanisms operate both in acute intermittent and continuous bacteremia (Werner et al., 1967).
The present study was conducted to determine whether the bacteremia in bacterial endocarditis is continuous or intermittent.

Material and Methods

Three 10 ml or less venous blood samples, preferably before antibiotic therapy were collected from each patient at an interval of at least 2 hours over a period of 24 - 48 hours. Blood was inoculated into blood culture bottles containing base broth at patients bed side and incubated at 37°C. The culture were kept for 3 weeks before discarding.
Culture bottles were examined in the morning and afternocin of the day of incubation and in the morning of each day thereafter for turbidity.
Subcultures were made on the 1st, 4th and 7th day of incubation on the respective media, incubation was done for 24 to 48 hours at 37°C before discarding. One set was incubated aerobically and another anaerobically.

Results

Two organisms were mainly isolated i.e., streptococci and staphylococci as shown in Table 1.

Table I

Total number of positive cases	18
Total number of blood cultures	53
Total No. of positive blood cultures	29

Frequency of Isolation on Difference Blood Cultures

Organisms	No. of patients in which causative orgs isolated	First blood culture specimen	Second blood culture specimen	Third blood culture specimen
Streptococci	14	9	4	9
Staphylococci	4	3	1	3
Total	18	12	5	12

Maximum positive results were obtained in 1st and -third cultures while the second blood culture gave the lowest yield i.e., 9.43% (Table II).

Table II

Percentage of Positive and Negative Specimens cultured in Bacteriological proven Cases of Infective Endocarditis.

– Total number of patients	26
– Bacteriologically confirmed cases	18
– Total number of blood cultures in bacteriologically confirmed cases	53

Cultures	Positive cultures %
First blood specimen	22.64
Second blood specimen	9.43
Third blood specimen	22.64
Total:	54.71

Discussion

There are divergent opinions concerning the consistency of bacteremia in bacterial endocarditis. It may be continuous (Kelson and White, 1945; Barritt and Gillespie, 1960; OlCeefe and Gorbach, 1978;

Werner et aL, 1967) or intermittent (Newman et aL, 1954; Belli and Waisburn, 1956).
In this study the bacteremia was intermittent in nature. The results (Table. I) show that the first culture was positive in 22.64% of the cases followed by third blood culture which was also positive in the same number of cases, the second blood culture was positive in only 9.43% of of the cases.
This suggests that niiltiple cultures should be taken in bacterial endocarditis. However, the actual time at which the blood culture is taken is not crucial (Hurst, 1978). Even if a blood culture gives negative results, further attempts should be made, because negative results may be due to intermittent nature of bacteremia.

References

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