

Relative Frequency of Streptococcal Endocarditis to Staphylococcal Endocarditis

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SUMMARY :

Twenty six cases with suspected infective endocarditis were studied. Three blood cultures were taken from each patient. The predominant causative agent was streptococci followed by staphylococci. The relative frequency of streptococcal to staphylococcal infection in this study was 3.5 : 1.

INTRODUCTION:

The most predominant organism in bacterial endocarditis is streptococcus, because there are more chances of their invasion into the blood stream. The next frequent organism is staphylococcus, which causes acute infection but its chances of invasion into the blood stream are less. Why streptococci choose to infect already diseased heart and staphylococci normal heart depends upon the organotropism reflecting microenvironmental preferences (1).

The present study was undertaken to study the ratio of streptococcal to staphylococcal endocarditis in our patients suspected of bacterial endocarditis.

MATERIALS & METHODS.

Three 10ml 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 bedside and incubated at 37°C. The culture medium were kept for 3 weeks before discarding.

Culture bottles were examined for turbidity

in the morning and afternoon of first day of incubation and in the morning of each day thereafter.

Subcultures were made on the 1st, 4th & 7th day of incubation on the respective media, incubation was done for 24 to 48 hours at 37°C before discarding.

A total of 26 patients were included in the study.

RESULTS :

Table : I shows the percentage and the ratio of bacterial species in the positive patients.

No gram negative organism was isolated in this study. Of the 18 patients with positive results 13 patients were infected by gamma hemolytic

TABLE I
PERCENTAGE OF BACTERIAL SPECIES
IN POSITIVE CULTURES

ORGANISMS	%
Streptococcus viridans	72.22%
Staphylococci	22.22%
Streptococcus faecalis	5.55%

(Ratio of streptococcal endocarditis to staphylococcal endocarditis was seen to be 3.5:1).

Streptococcus viridans giving a percentage of 72.22% Staphylococci were isolated in 4 patients 22.22% and *Streptococcus faecalis* in one 5.55%. The ratio of streptococcal endocarditis to staphylococcal endocarditis was 3.5 : 1.

DISCUSSION .

The ratio of Streptococcal endocarditis to Staphylococcal endocarditis was shown to be 3.5:1 in the present study. Pankey (2) reported a ratio of 2.6:1. The present study in comparison reports a higher ratio of streptococcal endocarditis. The ratio is high because the patients had rheumatic or congenital heart disease which predisposes them more to streptococcal infection. Chances of streptococcal invasion into the blood stream is also more common. Acute infective endocarditis is caused by staphylococci but there are less chances of their invasion into the blood stream and in our study the incidence of staphylococcal infection was less. Why streptococci choose to infect already diseased heart and staphylococci

normal heart depends upon the organotropism reflecting micro environmental reference (1).

A comparison of the cases since 1924 (3) shows a continual and steady decline in the proportions of cases caused by alpha hemolytic streptococci. This decrease has been balanced by an increase in the number of cases resulting from non-hemolytic streptococci as reported by Rabinovich et. al., (3). This is in agreement with the present study as well, where gamma hemolytic streptococcus *viridans* predominance was seen.

REFERENCES :

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