

# Etiology Of Endocarditis In The West; Africa and Pakistan—A Comparison

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## SUMMARY:

The predominant causative agent causing bacterial endocarditis was studied and the results obtained from specimens at different hospitals in Karachi were compared to the published literature in the Western and African countries, and the differences in results are discussed.

## INTRODUCTION:

In the Western literature the organisms causing endocarditis are mainly streptococci of the viridans group followed by staphylococci and enterococci. This seems to be the usual pattern of the etiological agents isolated from cases of bacterial endocarditis.

The alpha hemolytic streptococcal and *Streptococcus faecalis* cause sub acute bacterial endocarditis and staphylococcal cause acute bacterial endocarditis.<sup>1</sup>

However, in African literature *Staphylococcus aureus* has been reported as the most predominant organism. Since no work was so far done on the type of bacterial invasion in bacterial endocarditis in Pakistan. This present series was undertaken and compared to the Western and African literature.

## MATERIAL AND METHODS:

Blood samples were obtained from patients undergoing treatment at the medical Centres in Karachi including the National Institute of Cardiovascular Diseases, Jinnah Postgraduate Medical Centre, and the National Institute of Child Health J.P.M.C., Karachi. 26 patients were studied.

Three blood samples were obtained from each patient with an interval of at least two hours. The total

number of blood samples cultured were 71 instead of 72 because one patient refused to give the third sample.

The samples were obtained and transported to the laboratory as quickly as possible where their cultures were done.

## RESULTS:

Table I shows the percentage 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 *Streptococcus viridans* giving a percentage of 72.22%. Staphylococci were isolated in 4 patients (22.22%) and *Streptococcus faecalis* in 1 (5.55%).

TABLE — I

PERCENTAGE OF BACTERIAL SPECIES IN THE POSITIVE PATIENTS

ORGANISMS	NO. OF PATIENTS	%
<i>Streptococcus viridans</i>	13	72.22%
Staphylococci	4	22.22%
<i>Streptococcus faecalis</i>	1	5.55%
Total patients positive	18	69.23%

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**DISCUSSION:**

We can see from the results shown in the table that present study is in agreement to the Western literature in which also **Streptococcus viridans** predominate followed by Staphylococcal and than Streptococcal faecalis<sup>2,3</sup>.

However, the present study and the Western literature differed from the studies done in Africa.

A survey of infective endocarditis in Africa differed from this study with respect to the predominant causative organism **Staph. aureus**. It was found in their study only 3% of the patients as compared to our study 15.3% of the patients had a history of dental treatment preceding endocarditis. The generally healthy state of the teeth and the rarity of dental manipulation

in the Ugandan population may explain the low prevalence of dental source of endocarditis.<sup>4</sup>

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