

# Streptococcal infection observed in the Autumn of 1995

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## SUMMARY

*Near patient testing demonstrated an unusual infection pattern with a high incidence of Lancefield group D  $\beta$ -haemolytic streptococci in patients with pharyngitis and tonsillitis in a London general practice. This raises questions regarding the epidemiology of this streptococcus strain, which is not usually associated with upper respiratory infections.*

**Keywords:** upper respiratory tract infection; near patient testing.

## Introduction

THE  $\beta$ -haemolytic streptococcus ( $\beta$ HS) is recognized as a cause of sore throat and tonsillitis as well as other serious delayed effects.

Following a previous study of upper respiratory infections in a study carried out in a London general practice in 1968,<sup>1</sup> near patient testing for pathogenic bacteria and their antibiotic sensitivity pattern was instituted in my practice in 1970. This report describes an unusual infection cluster abstracted from an FRCGP Fellowship by Assessment (FBA6) presentation.

## Methods

The patients were drawn from a central London private general practice comprising 514 male and 592 female patients. The age-sex distribution of the practice is similar to that of the United Kingdom as a whole.

All patients presenting between 1 September 1995 and 30 November 1995 with either pharyngitis (sore throat with hyperaemia of the fauces) or tonsillitis (enlarged tonsils with hyperaemia, pus, and fever) had a throat culture taken; this was cultured overnight at 37°C on a blood agar plate in the practice laboratory before antibiotic treatment was considered. Between 1 and 30 November 1995, positive cultures containing haemolytic species were further subjected to Lancefield grouping using a standard antigen-agglutination technique. All patients shown to have a  $\beta$ HS were prescribed phenoxymethyl penicillin for five days, as recommended in the British National Formulary,<sup>2</sup> and check cultures were taken at the end of this treatment course.

## Results

During September and October 1995, 33 throat cultures were processed and 13 were shown to contain haemolytic streptococcus species. Consequently, during November 1995, 42 cases of pharyngitis or tonsillitis were subjected to more detailed study. Eighteen cultures grew haemolytic species and these were sent to a reference laboratory for Lancefield grouping: eight were found to be groupable bacteria and the positive results are summarized in Table 1.

Sixteen patients were subsequently re-examined to confirm that the  $\beta$ HS had been eradicated, and 14 were confirmed as being free from infection.

In the three-month period from September to November 1995, 75 patients presented with throat infections; on re-audit during the period January to March 1996, 27 throat infections were seen in the practice and, of these, five cultures contained haemolytic species. This dramatic decrease in streptococcal isolations led to the conclusion that there had been a local increased incidence of  $\beta$ HS infections.

## Discussion

The commonest pathogenic  $\beta$ HS is the Lancefield group A bacterium, with a minority of pathogens belonging to groups B, C, and G. Group D streptococci usually cause wound infection, soft tissue infection, and internal infections as opposed to the other groups that predominantly cause throat infections.<sup>3</sup> An unexpected observation was that five of the eight bacteria positively identified in this study were group D  $\beta$ HS, and this leads to the conclusion that this bacterium was probably the cause of a significant proportion of upper respiratory infections in the practice patients.

In this study, 42 cases of pharyngitis or tonsillitis were examined bacteriologically and  $\beta$ HS were isolated in 19% of these. This should be compared with Sanders and Norman,<sup>4</sup> who reported 21%  $\beta$ HS isolations in throat cultures. Howe *et al*<sup>5</sup> demonstrated that 32% of their patients were infected with a  $\beta$ HS. It is clear that the streptococcus remains a prevalent bacterium causing upper respiratory infections.

Treatment of streptococcal infections is a subject of debate. Current practice in the United Kingdom is clearly stated in the British National Formulary:<sup>2</sup> 'It (phenoxymethyl penicillin) is indicated principally for respiratory tract infections in children, for streptococcal infections...' However, Howe *et al*<sup>5</sup> recently concluded that cefixime is the treatment of choice.

The unusual finding of a high incidence of group D  $\beta$ HS in throat infections is worthy of note, raises unanswered questions, and forms a basis for further studies in the epidemiology of  $\beta$ HS infections. The study also illustrates the potential of near patient testing propounded by Hobbs.<sup>6</sup>

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**Table 1.** Number of positive cultures containing haemolytic species after Lancefield grouping.

Lancefield group	Positive cultures
A	0
B	2
C	0
D	5
E	0
F	1

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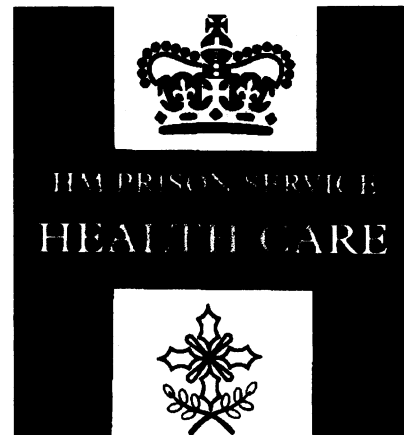
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