A Profile of throat swabs cultured at Kalafong Polyclinic

To the editor: Sore throat is a common problem encountered in the Family Medicine clinic at Kalafong hospital. Such patients are usually treated with penicillin as stipulated by the standard treatment guidelines of the National Department of Health for tonsillitis. [1] It is possible that patients are treated with antibiotics unnecessarily but it is well known that it may be difficult to accurately discriminate between bacterial and viral tonsillitis/pharyngitis by only observing the throat and possible rash (as the above guidelines seem to suggest.) The tendency to prescribe antibiotics to most patients with sore throats is possibly not cost effective and could cause bacterial resistance to common antibiotics.[2] It is, however, important not to miss especially Streptococcal group A throat infections in children because of potentially dangerous sequelae.[3]

A study was undertaken to: (1) Determine the nature of organisms cultured from throat swabs at the Kalafong Family Medicine clinic; (2) Determine the sensitivity of cultured organisms to the most commonly used antibiotics for sore throats; and (3) Evaluate whether the standard treatment guidelines are sufficient in our context and to suggest alternative treatment guidelines if the standard guidelines are found to be lacking.

A prospective descriptive study was done in which all 48 patients presenting with sore throat were recruited during a six month period. After informed consent was obtained, a pus swab for culture and sensitivity was taken by the "dry-swabbing" technique from the pharynx and tonsillar beds of each patient.[4]

There was no growth in 64,6% of cultures (31 patients). "Mixed organisms" were cultured in 2,1% (1 patient) indicating possible contamination with saliva. In 22,9% of cases, a Streptococcus group A was cultured (11 patients), in a further 6,3% (3 patients) of cases Streptococcus non-group A and in another 6,3% Haemophilus species were found. No other organisms were cultured. In the case of one of the patients, two different pathogenic organisms were cultured in the same patient.

All Streptococcus group A organisms were sensitive to amoxycillin, ampicillin, penicillin G and cephalosporin*s* (48 cultures) whereas 90,9% (10 cultures) were sensitive to erythromycin and 63,6% (7 cultures) sensitive to aminoglycosides. The three Streptococcus non-group A cultures were sensitive to all of the above antibiotics.

All of Haemophilus cultures (3 cultures) grown were sensitive to erythromycin and cephalosporins, while only one was sensitive to ampicillin/ amoxycillin.

In the majority of cases, no organism was cultured. This probably indicates a viral cause. Although the sample was small, a sufficient number of Streptococcus cultures were obtained to draw preliminary conclusions on its sensitivity profile. As the primary aim of treating sore throats with antibiotics is to prevent the complications of Streptococcus group A infections, it is concluded that the most appropriate antibiotic to use is penicillin VK as all Streptococcus group A, as well as most of the other organisms cultured, were sensitive to it. (During the study, only sensitivity towards penicillin G was tested but, according to Mandell et al, penicillin VK can be substituted for Penicillin G if the oral route is preferable).[5] An added advantage is that all Streptococcus non-group A cultured would also be sensitive to Penicillin VK therefore covering a large proportion of proven bacterial infections. Alternatives are ampicillin or amoxycillin if penicillin VK is not available. If the patient does not improve due to possible Haemophilus infection or is penicillin allergic, erythromycin is the preferred alternative as it is cheaper than (but with similar bacterial sensitivity) cephalosporin.

In conclusion, according to bacterial sensitivity the standard treatment guidelines of the Department of Health for the management of tonsillitis are adequate, when seen in the context of this study.

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Table I: Findings of cultures and sensitivity

Organism	% of patients	Total cultures from 48 patients *	Ampicillin/ amoxicillin	Cephalosporin	Erithromycin	Aminogly -coside
No growth	64,6	31	-	-	-	-
Mixed organisms	2,1	1	-	-	-	-
Streptococcus group A	22,9	11	11	11	10	7
Streptococcus non group A	6,3	3	3	3	3	3
Haemophilus species	6,3	3	1	3	3	Not tested
Total		49	15	17	16	10

*Two organisms were cultured from one of the patients.