SUPERFICIAL INFECTIVE DERMATOSES IN SINGAPORE — A SURVEY

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INTRODUCTION

Superficial infections of the skin are very common in the humid tropical climate of Singapore. It is especially prevalent in children of the lower income group, where the standard of hygiene and cleanliness, is not exactly ideal. These patients are treated as outpatients either at the Government clinics or at the clinics of private practitioners.

In treating any infective condition, it is best to identify the causative organism and determine its sensitivity to the antibiotic agents. The object of this survey is therefore to determine the types of organisms responsible for superficial infective dermatosis in Singapore and also their sensitivity to antibiotic agents.

The purpose of this paper is to present the results of a survey conducted on one hundred consecutive patients with superficial skin infections seen in a skin outpatients clinic in Singapore.

MATERIAL AND METHOD

Patients with infected skin diseases were diagnosed clinically. Two swabs were taken from each patient for bacteriological examinations. One swab from the skin lesion and the other from the anterior nares of the patient. No selection was made of the type of skin lesions.

The swabs were innoculated on to blood plates and Robertsons cooked meat medium. The organisms cultured were identified and their in vitro sensitivity to antibiotic agents were determined by the antibiotic disc method on blood plates. The zones of inhibition were graded as +, ++, or+++ and if there was no zone of inhibition they were recorded as—ve. The greater the zone of inhibition the more the organism is sensitive to the antibiotic agent. The antibiotic discs used were as follows:

Penicillin	Cephaloridin
Tetracycline HCl	Streptomycin
Oxytetracycline	Chloramphenical
Cloxacillin	Kanamycin
Ampicillin	Neomycin

PATIENT POPULATION AND PERIOD OF SURVEY

There has been a lot of surveys on infection in Hospitals, and on in-patients, but very few surveys carried out on patients treated outside hospitals.

A recent survey of infection was carried out in England, on patients treated at home (1). This prompted the authors to carry out this survey on skin infections in Singapore on patients treated outside hospitals.

All the patients in this survey, reported for treatment for their skin condition only. None of them have any accompanying systemic infection. All of them were attending as outpatients.

No selection was made as to their geographical distribution. During the period from June 1966 to January 1967, 100 consecutive cases of infective skin conditions were selected at random, as they presented for treatment at a skin outpatients clinic.

Although most of the patients were living in postal district 1 & 2, there were many from widely differing parts of Singapore, and no geographical correlation can be made from this survey.

TYPES OF SKIN LESIONS

The types of skin lesions were as follows:

Impetigo	18
Furuncles	11
Carbuncles	7
Ecthyma	6
Cellulitis	1
Eczema	24
Papular urticaria	13
Lichen Simplex chronicus	6
Folliculitis of scalp	1
Acute paronychia	2
Angular stomatitis	1
Herpes zoster	2
Acne	2
Non-specific ulcers	4
Contact dermatitis	2

AGE DISTRIBUTION

In this collection, the age of the patients varied from one year to 69 years of age, but the majority of the patients are in the younger age group—under 15 years old. The reason for this could be that children play together, and cross infect each other. They fall and from a small abrasion with little attention to cleanliness, would lead to skin infection without difficulty. Scratching a mosquito bite with dirty finger-nails could easily turn the lesion septic.

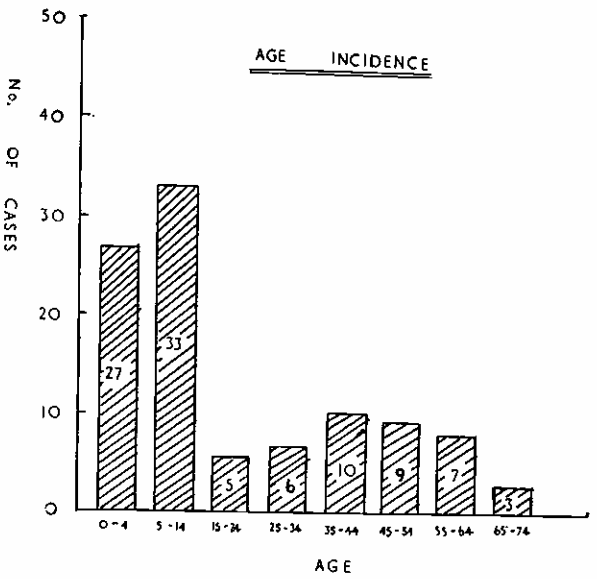

Fig. 1

SEX DISTRIBUTION

The distribution in the sexes are about equal. This is to be expected in infections of

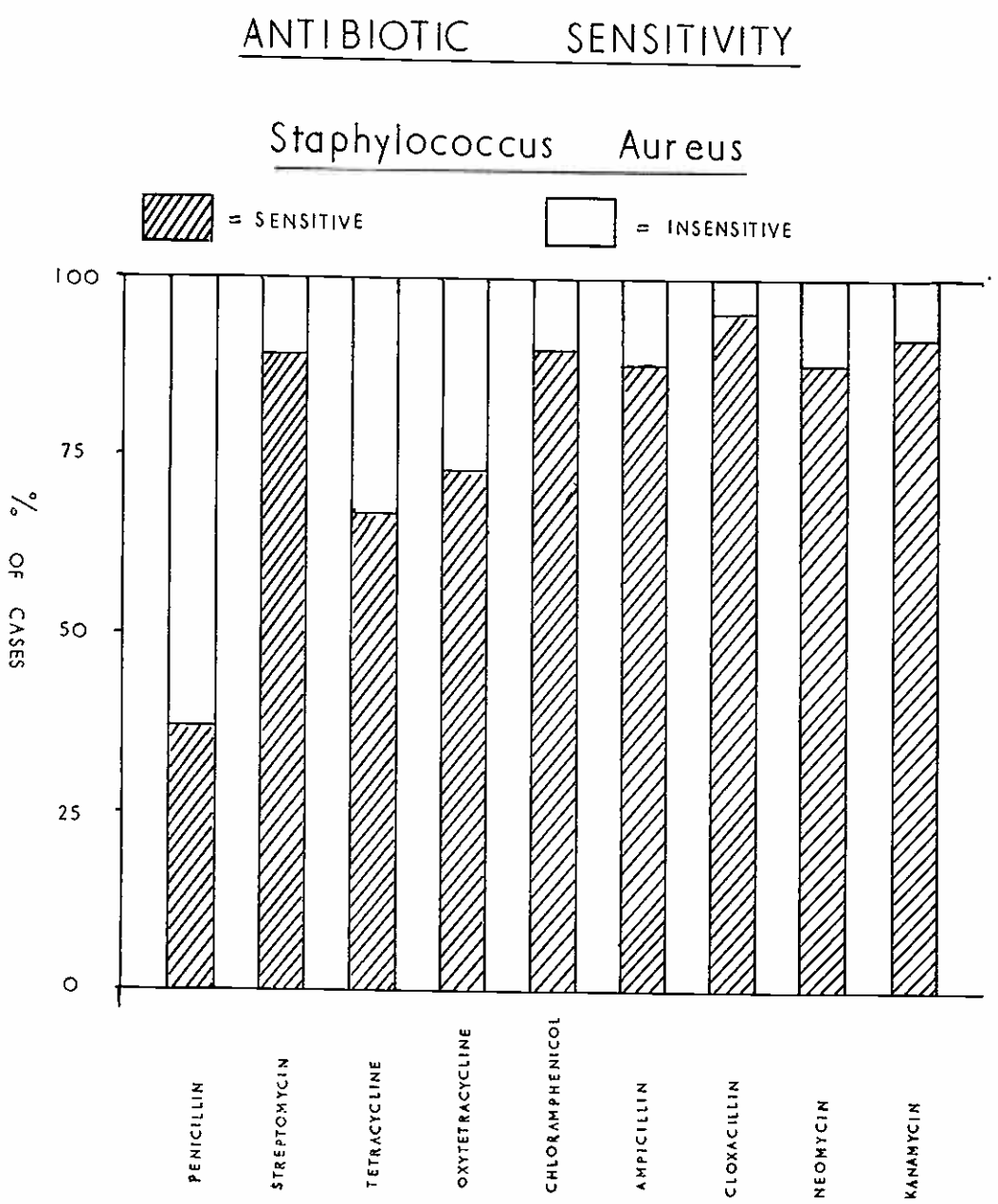

Fig. 2

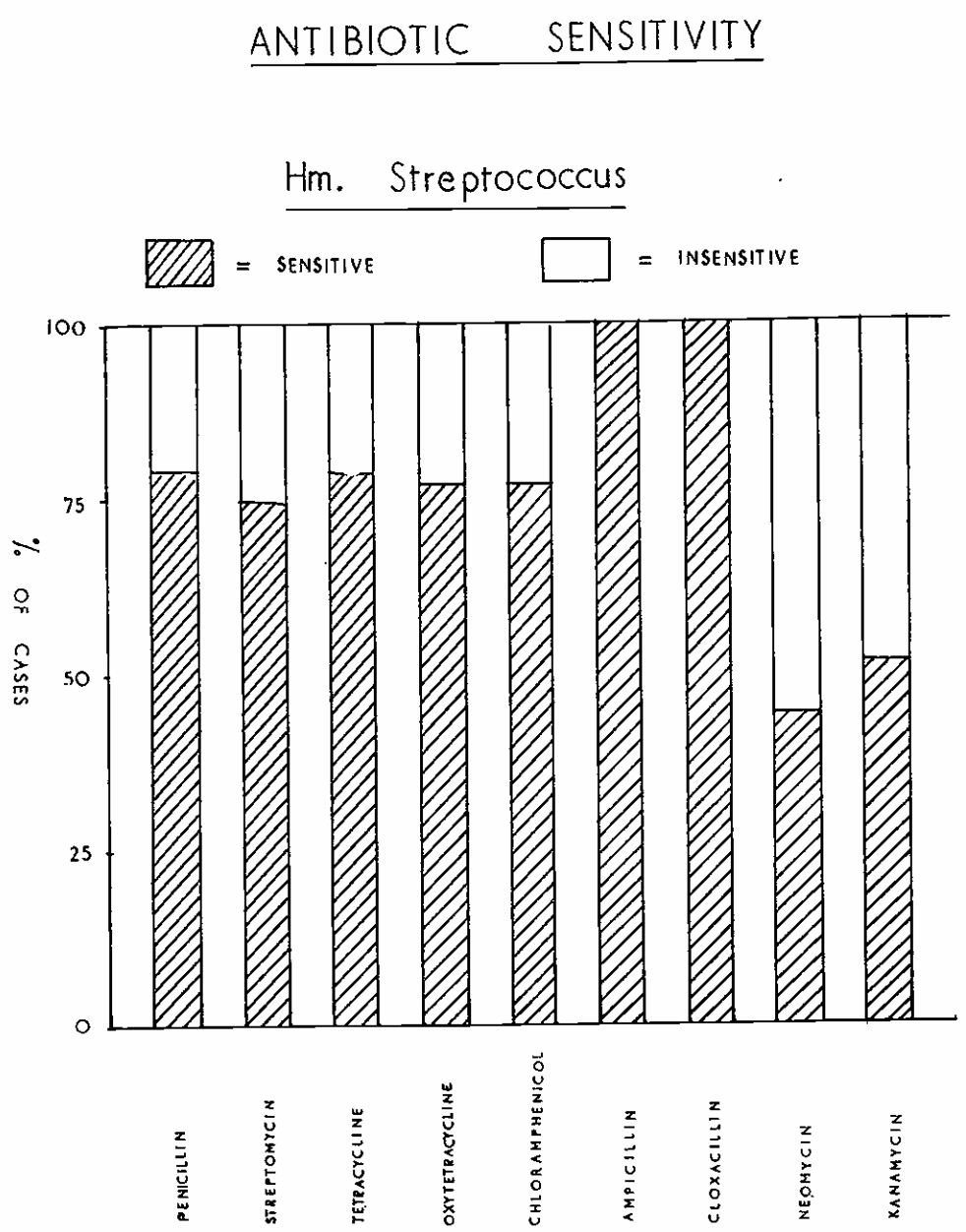

Fig. 3

the skin, and especially when the majority are children.

Males 51 Females 49

BACTERIAL FLORA

There were quite a variety of organisms isolated from the cultures. The main one being Staphylococcus aureus. It was responsible for 80% of the cases. The remainder was caused by beta-haemolytic Streptococci. Proteus vulgaris, Diphtheroids and Klebsiella aerogenes were responsible for the odd cases.

ANTIBIOTIC SENSITIVITY

Staphylococci vary enormously in their sensitivity to antibiotics. It has been known that Staphylococcal infections acquired outside hospitals respond to penicillin whereas the hospital Staphylococci are usually resistant to penicillin.

Only 30% of the Staphylococci isolated in the survey conform to this rule. That is if we assume the patients in the outpatient clinics did not acquire their infection in hospitals.

Streptococci on the other hand are generally sensitive to Penicillin but it has been known too that a patient carrying a strain of penicillinase producing Staphylococcus in the nose can render the Streptococci in the skin infection resistant to Penicillin. Only in these conditions would the combined treatment with Penicillin and Streptomycin be recommended.

In this collection there were three strains of Streptococci that were resistant to Penicillin —one of them had a Penicillin resistant Staphy-

lococcus isolated from the pus culture and the other two were not nasal carriers of Staphylococci.

Sulphonamides were not included in the survey because it has been found that many of the Staphylococci are not sensitive to it and almost all of the beta-haemolytic Streptococci are resistant to it.

NASAL CARRIERS

In this survey, there were 33 nasal carriers, among the 80 cases of Staphylococcal infections, making it an incidence of 41%.

DISCUSSION

Superficial infections of the skin are common in children. The vast majority of cases are due to the Staphylococcus aureus. Fortunately, the majority of superficial skin infections respond very well to topical treatment, such as cleaning the infected areas with antiseptics, removal of crusts, and applications of antiseptic or antibiotic creams. It is only when topical treatment failed, or when the lesions are very extensive, that one should resort to systemic antibiotics.

From this survey it has been found that Penicillin is not the drug of choice, as 70% of them are penicillin resistant. Streptomycin, although effective, has the disadvantage that it cannot be given orally. Exhibited parenterally it causes pain, and especially in children it has no place in the treatment of skin infections. Furthermore, Streptomycin should be reserved for use in tuberculosis treatment.

A large proportion of the Staphylococci are sensitive to Chloramphenicol. Because of its serious side effect of bone marrow depression, this drug should not be recommended for routine use. It should really be reserved for the treatment of Typhoid patients.

When indicated, the tetracyclines which can be given orally should be the drug of choice in superficial skin infections especially in children. The synthetic penicillin, such as Ampicillin, Cloxacillin, and other expensive antibiotic agents like Cephaloridin, Fucidin and Gentamicin should be kept as reserves to be used as a last resort.

CONCLUSION

1. A survey of superficial skin infections was made on 100 patients as they presented for treatment as skin outpatients.
2. The vast majority of patients are children under 15 years of age.
3. Staphylococcus aureus is the commonest causative organism isolated.
4. The antibiotic sensivity was determined and presented.
5. From the results, it would appear that the routine use of thec ombination of Penicillin and Streptomycin injections should NOT be recommended.

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