BACTERIOLOGICAL STUDY OF PYODERMA IN CHILDREN

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Two hundred new cases of pyoderma were investigated bacteriologically. Susceptibility to common antibacterial drugs was also determined. A pure growth of *S. aureus* coagulase positive was isolated in 130 cases, coagulase negative staphylococci in 9 cases and beta-hemolytic streptococci in 42 cases. Mixed growth of *S. aureus* and beta-hemolytic streptococci was obtained in 19 cases. The rates of susceptibility of coagulase positive *S. aureus* to various antibiotics were, erythromycin 95.9%, gentamicin 95.5%, co-trimoxazole 94.6%, amoxycillin 91.2% and cloxacillin 82.5%. Resistance to multiple drugs was seen in 56.5% strains. Coagulase negative staphylococci were more susceptible and the incidence of multiple drug resistance was far lower (32.5%). Beta-hemolytic streptococci were resistant to tetracycline (23%), penicillin (13.2%), cloxacillin (11.5%), ampicillin (8.2%) and amoxycillin (3.3%), but all were sensitive to gentamicin.

Key words : Pyoderma, Susceptibility.

Pyoderma is very common in children.[1] If the treatment for pyoderma has to be given before the result of antibiotic susceptibility is available, one should have an up-to-date knowledge about the strains of causative micro-organisms prevalent in the local community and their resistance to different antibiotics. Hence an attempt has been made to identify various micro-organisms causing pyoderma in children and their antibiotic susceptibility pattern to the commonly used antibacterial drugs.

Materials and Methods

Material was taken from the lesions of 200 fresh cases of various types of pyoderma, and studied by Gram stain, and culture in 50% human blood agar and nutrient agar, incubated aerobically at 37°C for 24 and 48 hours according to standard methods.[2]

All the organisms isolated were tested for antibiotic susceptibility by the disc diffusion technique by measuring the zone of inhibition. The disc concentrations are shown in table II. A control plate with a standard *Staphylococcus* (Oxford) was always put up with these tests for comparison.

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Results

Pure growth of *S. aureus* in 130 cases, beta-hemolytic streptococci in 42 cases and both organisms in 19 cases were isolated from different types of pyoderma (Table I). The antibiotic susceptibility test for all the organisms isolated is shown in table II.

Comments

Our results by and large corroborate the findings of previous workers.[3-13]

S. aureus was most susceptible to erythromycin, gentamicin, co-trimoxazole and amoxycillin in that order. The highest resistance was observed with penicillin, tetracycline and streptomycin, in that order. Resistance of coagulase positive staphylococci to penicillin is well known.[9,11,12] All coagulase negative staphylococci in our study were susceptible to erythromycin, ampicillin, gentamicin, co-trimoxazole, amoxycillin and cloxacillin, but were resistant to penicillin (32.3%) and tetracycline (44.5%). Multiple drug resistance was observed among 56.5% of coagulase positive

Table I. Micro-organisms isolated from different types of pyodermas.

Clinical type	Number (%) of cases	*S. aureus* (pure)	Staphylococci coagulase negative	Beta-hemolytic streptococci (pure)	*S. aureus* and beta-hemolytic streptococci
Impetigo	94 (47%)	69 (73.4%)	2 (2.1%)	12 (12.7%)	11 (11.7%)
Ecthyma	27 (13.5%)	1 (3.7%)	0 0	24 (88.8%)	2 (7.4%)
Folliculitis	24 (12%)	22 (91.6%)	0 0	0 0	2 (8.3%)
Furunculosis	8 (4%)	7 (87.5%)	0 0	0 0	1 (12.5%)
Peri-poritis	12 (6%)	8 (66.6%)	4 (33.4%)	0 0	0 0
Infected scabies	35 (17.5%)	23 (65.7%)	3 (8.5%)	6 (17.3%)	3 (8.5%)
Total :	200				

Table II. Susceptibility of the isolated strains to various antibiotics.

Antibiotic	Disc concentration	Number (%) of susceptible strains isolated		
		S. aureus	Staphylococci coagulase negative	Beta-hemolytic streptococci
Penicillin	10 Units	67 (44.9%)	7 (77.7%)	53 (86.3%)
Streptomycin	10 μg	86 (57.7%)	3 (55.5%)	56 (91.8%)
Chloromycetin	10	122 (81.8%)	8 (88.8%)	58 (95%)
Tetracycline	10	85 (57%)	5 (55.5%)	47 (77%)
Erythromycin	15	143 (95.9%)	9 (100%)	57 (93.4%)
Ampicillin	10	131 (87.9%)	9 (100%)	56 (91.8%)
Gentamicin	10	142 (95.3%)	9 (100%)	61 (100%)
Cotrimoxazole	15	141 (94.6%)	9 (100%)	58 (95%)
Amoxycillin	5	136 (91.2%)	9 (100%)	59 (96.7%)
Cloxacillin	1	123 (82.5%)	9 (100%)	54 (88.5%)

S. aureus and 32.5% of coagulase negative staphylococci in our study.

Till 1960, all streptococci were susceptible to penicillin. Kandhari et al[8] in 1962 observed penicillin resistant streptococci, while Verma et al[5] in 1981, found streptococci resistant to ampicillin and cloxacillin. Brorson et al[14] reported that 20% of the strains of beta-hemolytic streptococci were resistant to tetracycline only, but to no other antibiotic including penicillin. In our study, streptococci have shown maximum resistance to tetracycline, and to a lesser extent to penicillin, cloxacillin and ampicillin.

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