

## USE OF BENZATHINE PENICILLIN IN IMPETIGO IN CHILDREN

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One hundred and fifty children having impetigo were investigated bacteriologically. Pure growth of *Staphylococcus aureus* was found in 92 children, *Streptococcus pyogenes* in 39 children and both organisms were isolated in 19 children. Forty four percent *Staphylococcus aureus* and 82% *Streptococcus pyogenes* were sensitive to penicillin. One hundred children were treated with injection benzathine penicillin and fifty cases treated with oral tablet sulfamoxole. Benzathine penicillin was effective in 92.3% cases irrespective of whether the staphylococci and streptococci isolated were sensitive to penicillin or not. Sulfamoxole therapy was effective in 64% children.

Key words : Impetigo, Treatment.

Various workers have used benzathine penicillin successfully in the treatment<sup>1-3</sup> and prevention<sup>4</sup> of impetigo. Benzathine penicillin is convenient to use in out-patients since it is given once a week unlike other injectable antibiotics. We have made an attempt to study whether or not benzathine penicillin is still effective in the management of impetigo in children.

#### Materials and Methods

One hundred fifty children in the age group of 2-10 years having impetigo were selected at random, mostly from the rural areas, who had not received any treatment in the recent past. Material from the lesions was taken for Gram stain and culture in nutrient agar and blood agar. Antibiotic susceptibility tests were carried out with the isolated organisms (Table I).

One hundred children (group I) were treated with a single injection of benzathine penicillin, 1.2 MU intramuscularly for the age group 7-10 years, and 0.6 MU for children 6 years and below in age.

Fifty children (group II) were given oral tablet sulfamoxole 500 mg twice daily for the

Table I. Antibiotic susceptibility of the organism isolated from the lesions.

Antibiotic	Disc concentration	Number (%) of susceptible strains isolated	
		<i>Staphylococcus aureus</i>	<i>Streptococcus pyogenes</i>
Penicillin	10 unit	49 (44.1%)	48 (82.7%)
Erythromycin	10 µg	105 (94.5%)	54 (92.5%)
Ampicillin	10 µg	93 (83.7%)	52 (89.6%)
Sulfamoxole	15 µg	47 (42.3%)	34 (58.6%)
Cotrimoxazole	15 µg	99 (89.1%)	55 (94.8%)

age group 7 years and above, and 250 mg twice daily for 6 years of age and below for seven days. All the patients in both groups were instructed to clean the lesions with soap and water twice daily. Patients were followed-up once a week for six weeks.

Children were further divided in three groups according to the number of lesions, 1-10, 11-20 and more than 20 lesions and the effect of treatment was compared in these three groups separately.

#### Results

From 150 cases of impetigo, pure growth of *Staphylococcus aureus* was isolated in 92 (61.3%), *Streptococcus pyogenes* in 39 (26%), and both organisms in 19 (12.6%) children. Antibiotic susceptibility tests revealed that 44% of *Staphy-*

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Table II. Result of treatment in the two groups.

Type of treatment	Number of cases treated	Number of lesions	Number of cases cleared in		Total number of cases cleared	Percentage
			1 week	2 weeks		
<b>Group I</b>	25	1-10	22	3	25	100
(Benzathine penicillin)	31	11-20	20	11	31	100
	44	>20	6	29	35	79.5
<b>Group II</b>	14	1-10	9	5	14	100
(Sulphamoxole)	16	11-20	6	8	14	87.5
	20	>20	1	3	4	20

*lococcus aureus* and 83% *Streptococcus pyogenes* were susceptible to penicillin (Table I), but 94 (94%) children (Group I) showed response to benzathine penicillin (Table II). Out of 50 children in group II only 32 (64%) responded to sulfamoxole, but only 20% of children having more than twenty lesions responded to sulfamoxole.

#### Comments

Derrick and Dillon<sup>1</sup> have shown that benzathine penicillin was more effective than phenoxymethyl penicillin and erythromycin in the treatment of 708 patients with pyoderma, even when the strain was resistant to penicillin *in vitro*.<sup>2</sup>

Out of 100 children with impetigo in the first group in our study, 48 children responded well to a single dose of injection benzathine penicillin, while 43 cases needed another dose. The lesions healed within 10-14 days. Only 9 children did not respond to benzathine penicillin at all.

Eighteen (36%) children who did not respond to oral sulfamoxole in the second group, continued to develop new lesions. They were given benzathine penicillin subsequently and a single dose of benzathine penicillin was effective in 12 children. Six children had to receive the second dose after one week. They all responded well to benzathine penicillin. There was no un-

toward reaction, and no recurrence during the six-week follow up.

The presence of *in vitro* resistant staphylococci and streptococci did not seem to interfere with the *in vivo* clinical response. Similar observations have also been made by various workers.<sup>5-8</sup>

#### References

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