

Operation Dunking—A New Dimension to Scabies Control

By

R. J. FERNANDEZ,* VIJAYA R. BHALERAO,† RAJESH KUMAR†
R. M. CHATURVEDI,† S. SUNDER† AND SHOBHA S. KOWLI†

SUMMARY

The relative inefficiency of the conventional, unsupervised, home treatment of scabies with benzyl benzoate emulsion is known. With this in mind, a new, supervised, immersion method of treating scabies was developed at the Malavani Health Centre. The results of treatment of 4260 patients are described in this paper. This method is found to be safe, cost-effective and can be taken to the doorstep of the patients in a mobile van.

INTRODUCTION

A house to house morbidity survey in Malavani in December 1977 revealed that the prevalence of scabies was 47 per 1000 population.¹ Experience in the outpatient department of dermatology of the K.E.M. Hospital, run by the Municipal Corporation of Greater Bombay, has shown that the results of unsupervised home treatment of scabies are unsatisfactory. The present paper describes the results of a novel method of supervised treatment of scabies, in the entire family units, developed at the Malavani Health Centre.

MATERIAL AND METHODS

The patients in this study (Group I) were those attending the Malavani Health Centre for treatment of scabies. The organization of the centre has already been described in an earlier paper.¹ The results of the new immersion (dip)

method were compared with those of the conventional method of treatment in a group of patients (Group II) attending the dermatology outpatient department of the K.E.M. Hospital. The results of the treatments were evaluated at both places by the same team.

In every case in Group I, all members of a family were treated at one time. Each member of the family, including the index case, was examined by a doctor and the skin lesions were recorded on a chart. The patient was then made to take a bath with soap and water at the centre, and finally made to squat completely naked in 10% aqueous benzyl benzoate emulsion contained in an R.C.C. or a syntex tank. The tank measured 1 m x 1 m x 1 m and contained about 30 litres of 10% aqueous benzyl benzoate emulsion. Care was taken to see that the hips and the perineal area were immersed in the emulsion. The R.C.C. tank was fixed in the Health Centre whereas the syntex tanks were

From: The Departments of *Dermatology and †Preventive and Social Medicine, K.E.M. Hospital and Seth G.S. Medical College, Parel, Bombay-400 012.

movable. While squatting in the tank, the patient scrubbed areas of skin lesions with a gauze piece to break open the lesions. The patient also smeared the emulsion all over the body. He/she then stood outside the tank to allow the body to dry. He/she then wore his/her clothes and was instructed not to remove them for the next 24 hours. The entire operation was supervised by the clinic staff, a male in the case of male patients and a female in the case of female patients. The same emulsion was used over and over again; about 100 litres were required for 500 patients. No other treatment such as an antipruritic agent or an antibiotic was used in these patients.

In Group II, the patient was advised to bring all the family members to the hospital for treatment. Each infected person was given 300 ml of a 25% aqueous benzyl benzoate emulsion for three applications at home. Those with a bacterial infection were given an antibiotic in addition.

The patient was labelled as *cured* if all the skin lesions disappeared at the end of a week, as *partially cured* if 50% or more lesions disappeared; and as a *failure* if fewer than 50% lesions disappeared. A second treatment was given to failures as well as to those whose itching persisted beyond 7 days after the first treatment.

RESULTS

Table 1 shows the cure rate with both the *immersion* and conventional methods. The superiority of the *immersion* method is obvious.

Table 2 shows the rate of disappearance of itching with the two methods of treatment. Nine hundred and three (21.2%) of Group I patients and 748 (51.77%) of Group II patients required a second

TABLE 1
Cure rates by the immersion method and the conventional method

Outcome of treatment*	Dip method (n = 4260)	Conventional method (n = 1445)
Cured	3553	670
Partially cured	647	359
Failures	60	416

* Chi Square = 1101.448; df = 2; $p < 0.001$.

course of treatment; they included the 'failures' shown in Table 1.

TABLE 2
Disappearance of itching in two methods.
Results of the first course

Number of days for disappearance of itching	Dip method (n = 4260)	Conventional method (n = 1445)
1-4	2616	317
5-7	741	380
> 7	903	748

* Chi Square = 774.4778; df = 2; $p < 0.001$.

Table 3 shows the effectiveness of the second course of dip treatment when required.

TABLE 3
Results of second course of treatment

Outcome of treatment	Group I (n=903)	Group II (n=748)
Relieved	892	381
Not relieved	11	367

Chi Square = 530.4333; df = 1; $p < 0.001$.

The dip in aqueous benzyl benzoate emulsion was well tolerated by children and by adults and the only adverse effect occasionally recorded was chemical conjunctivitis which was self-limiting.

Table 4 shows the approximate cost of

treatment of 500 patients at the prices prevailing in 1983. The conventional treatment was found to be roughly 8 times as costly as the dip treatment.

TABLE 4

Approximate cost of the dip and conventional methods (expressed as rupees per 500 patients)

Type of treatment	Dip method	Conventional method
<i>First course:</i>		
Benzyl benzoate (100 litres)	480.0	1791.7
Antipruritic agent	0.0	500.0
Antibiotics	0.0	1000.0
<i>Second course:</i>		
Benzyl benzoate	101.0	1711.7
Total	581.0	5093.4

DISCUSSION

The advantages of the supervised treatment have been well described in the case of tuberculosis.³ Supervised treatment of scabies is being described for the first time to the best of our knowledge. Its effectiveness and low cost are well demonstrated by this study. The dip method is safe and can be supervised by paramedical or even non-medical personnel. Using portable syntex tubs, it can

be applied even in the remotest parts of the countryside. Thus, the dip method of treating scabies is likely to prove to be the answer to the problem of scabies in the developing countries like India.

ACKNOWLEDGEMENTS

We thank Dr. C. K. Deshpande, Dean, Seth G. S. Medical College and K.E.M. Hospital, Parel, Bombay, for allowing us to publish the hospital data.

REFERENCES

1. Desai, Vinodini, P., Kowli, Shobha, S., Chaturvedi, R. M., Sunder, S., Rajesh Kumar and Bhalerao, Vijaya, R.: Effectiveness of polio vaccination coverage in reducing the incidence of paralytic poliomyelitis in a highly endemic area of Bombay city. *J. Postgrad. Med.*, 30: 1-4, 1984.
2. Malavani Health Care Delivery System (December 1977 to December 1982): A review published by Seth G.S. Medical College, Parel, Bombay-400 012, 1983.
3. Pamra, S. P. and Mathur, G. P.: A concurrent comparison of an unsupervised daily oral regimen of th'acetazone plus isoniazide and a fully supervised twice-weekly regimen of streptomycin plus isoniazide in the domiciliary treatment of pulmonary tuberculosis: A cooperative investigation. *Ind. J. Tuberc.*, 20: 108-117, 1973.