

If the results of the two drugs are compared, those of sulphadiazine appear to be slightly superior to those of sulphathiazole, but statistically the difference is not significant. The effect of the two drugs on the course of temperature appears to be the same. In plague, unlike pneumococcal pneumonia, the temperature falls by lysis, and in many cases it is very irregular. Consequently, it is difficult in many cases to determine the exact hour at which the temperature has fallen to normal. If, however, we consider only those cases which showed a regular fall of temperature, in cases with no septicaemia the temperature came down to normal on an average in 80 hours, and in cases with septicaemia on an average in 113 hours in the case of both the drugs. It was, however, noticed that given the same doses, sulphadiazine maintained a higher blood concentration than sulphathiazole, and that the level of blood concentration, high or low, could be more easily maintained with sulphadiazine than with sulphathiazole.

The number of cases treated did not permit of an optimal dose being accurately worked out, but 10.0 gm. on first day and 6.0 gm. a day on subsequent days in the case of both drugs gave good results.

Summary

1. A report of treatment of 180 cases of plague with sulphadiazine and sulphathiazole in an epidemic at Poona is given.
2. The case mortality was 12 per cent with sulphadiazine therapy and 21 per cent with sulphathiazole therapy in all cases treated exclusive of those moribund at the time of admission and died within 24 hours. These results as compared to the case mortality of 53 per cent in cases treated with iodine, the usual hospital treatment in vogue in some previous trials, show a significant reduction in mortality.
3. Even in cases which were septicæmic at the commencement of treatment, sulphadiazine and sulphathiazole have reduced the case mortality to 20 and 37 per cent respectively as against 91 per cent in iodine treated cases.
4. The results of sulphadiazine treatment appear to be slightly better than those of sulphathiazole treatment but the difference is not statistically significant.
5. With the same dosage, sulphadiazine maintained a higher blood concentration than sulphathiazole.
6. No serious toxic reactions were encountered in cases treated with either of the two drugs. Even the incidence of mild reactions was low. However, sulphadiazine on the whole produced fewer toxic reactions.

My thanks are due to the Director, Haffkine Institute, Bombay, for his keen interest and active help in this investigation, and to the Director of Public Health for the Government of Bombay, Poona, for giving all facilities to conduct the trial.

ON THE POSSIBILITY OF USING OIL OF TURPENTINE FOR THE TREATMENT OF SCABIES

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WHEN it was noticed that the incidence of scabies is at present extremely high and that drugs such as benzyl benzoate, mitigal, tetmos, etc., are not available in this country, it was felt that it would be worth while to undertake an investigation with the object of discovering a sarcopticidal drug which would not only be efficient but would also be readily available.

In this connection, a large number of indigenous preparations commonly used for scabies in this country were tested, and in course of this investigation oil of turpentine was observed to possess properties whereby the mite was quickly overwhelmed and was soon killed on contact outside the body. The oil was used in the form of an emulsion and was prepared as follows:—

Oil turpentine, B.P.	20 parts	Soften the soap with
Soap shavings (bar soap)	q.s.	water; mix the
70 per cent alcohol	80 parts	oil and the soap
(If necessary the common methylated spirit may be used after dilution).		thoroughly in a pestle and mortar; mix the spirit gradually.

N.B.—90 per cent alcohol makes a very good emulsion, but for economy 70 per cent may also be used. The emulsion must always be well shaken before use.

Benzyl benzoate was first introduced by Kissmeyer (1937) in the treatment of scabies.* Since then it has been tried extensively and has been recognized to be the most powerful sarcopticidal drug so far discovered. It is also the most useful drug from the point of view of treatment. In a comparative study on the action of benzyl benzoate and oil of turpentine on mites, the results shown in table I were obtained.

The observations were carried out under the dissecting microscope by placing the mite on the dorsum of the hand, and a minute drop of the fluid was then allowed to run down the skin. As soon as the skin was dry, the mite was transferred to a glass slide. The movement of the legs was taken as an indication that it was still living.

It had been previously observed that mites, when treated with either resin-alcohol or gum arabic mixture on a glass slide, were 'killed' within 10 to 15 minutes, but when the experiments were repeated on the hand, they appeared

*It is believed that it was used for this purpose many years before this, but that its use had been abandoned.—EDITOR, *I.M.G.*

TABLE I

Effects of oil of turpentine and benzyl benzoate emulsions on adult female Sarcoptes scabiei var. hominis

OIL OF TURPENTINE					BENZYL BENZOATE, 20 PER CENT WITH AN EQUAL QUANTITY OF ALCOHOL AND SOFT SOAP					REMARKS				
Strength of alcohol used	Number of mites used for each experiment	Total number of mites experimented upon	Maximum death time (on hand)		Average death time (on hand)	Strength of alcohol used	Number of mites used for each experiment	Total number of mites experimented upon	Maximum death time (on hand)		Average death time (on hand)			
Per cent			min.	sec.	min.	sec.	Per cent		min.		sec.	min.	sec.	
50	1	5	4	45	4	10	90	1	7	2	0	1	27	According to Mellanby <i>et al.</i> (1942) the mites are killed within 5 minutes of contact with benzyl benzoate away from the body.
70	1	20	2	5	1	42	..	..	..	..	..	..
90	1	7	2	0	1	20	..	..	..	..	..	..

dead as soon as they came in contact with the mixture but soon afterwards they were able to free themselves completely of the entanglement.

It has been claimed by Mellanby, Johnson and Bartley (1942) that benzyl benzoate, when applied to the skin without any preliminary cleansing, is able to reach the mite in the burrow. They are of the opinion that a large percentage of the mite population on the body of a person can be eliminated by this process. With turpentine we have also observed identical results; after its application on the skin, mites killed in the burrows have been extracted after 24 hours. But it must be clearly recognized that neither benzyl benzoate nor turpentine is capable of penetrating the healthy skin. When a female mite was allowed to burrow, external application of either benzyl benzoate or turpentine produced no appreciable effect on the mite within half an hour. The fluid was applied at the time when the mite had just disappeared from view. Both benzyl benzoate and turpentine are contact poisons and, as has been shown previously, the mite is killed soon after contact.

As the action of the two drugs, benzyl benzoate and turpentine, is closely similar, their mode of application on the body should also be on similar lines. As the mites are quickly destroyed, it is immaterial how long the emulsion is allowed to remain on the body. We have not yet come across any unpleasant reaction following its use.

Our experience of the treatment of scabies is yet limited but the uniformly good results, we have obtained, justify its trial on an extensive scale in order to enable us to judge its true merit as a sarcopticidal drug.

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THE WASSERMANN POSITIVE RATE OF CASES FROM HOSPITALS AND VENEREAL CLINICS OF CALCUTTA IN 1939, 1943 AND 1944

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The intention is to present the findings in 6,000 cases with a view to determining if there is an increase in the incidence of syphilis in Calcutta. Groups of 1,000 cases have been taken serially from the Wassermann register of the laboratory.

THE TABLE

The cases tested.—The accompanying table gives the WR positive rate of a certain section, syphilitic suspects, of the civil population of Calcutta. It is by no means the positive rate for the mixed unselected population.

The bloods for examination were received from general wards in hospitals and venereal clinics. The general wards predominated before the anti-venereal drive, towards the end of 1943, and the clinics after the drive. Both from the hospitals and clinics the bloods were tested on clinical suspicion, not routinely. Only a small general hospital and a smaller special hospital were testing the bloods routinely.

The civil population of Calcutta was believed to be over 1½ millions in 1939 (1931 figures: 1,485,582 including Howrah and 1,196,734 excluding Howrah). The census of 1941 proved it to be over 2 millions (2,488,183 including Howrah and 2,108,891 excluding Howrah). The ration cards issued towards the end of 1943 proved it to be 3 millions (including Howrah).

By far the majority of the population tested was Indian.