I suggest that toleration, kindness, and understanding are not enough. We have failed if our methods perpetuate receptivity. The psychopath requires treatment which will replace that by simple measures that are biologically analogous to the stage which he has reached or has regressed to.

Conclusion

Two objections to the suggestions are not insurmountable—the difficulties of organizing any such scheme, and the danger that it would be used for merely punitive reasons.

To summarize, if the problem of chronic and subacute neurosis is recognized as one of social repudiation and parasitism in which the patient lives suicide, our task is to help the psychopath to return to the stringencies of life. These are not always wholly painful, though they appear so. Every person who has withdrawn from active life into parasitism can theoretically be helped by methods in which his receptivity is not encouraged and his capacity for symbolic biting is stimulated. So great has the problem seemed in the past that we unwittingly perpetuate methods which intensify our patients' demands upon us. Forms of rehabilitation and occupational therapy can be made available for the psychopath, though they must not be substitutes for a full investigation of each case and suitable psychotherapy where this is practicable.

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SULPHATHIAZOLE OINTMENT IN THE TREATMENT OF IMPETIGO

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The recent increase in the incidence of scabies and impetigo is generally known (Buxton, 1941; Carter, 1941). This has created an important medical and economic problem. Industry and the military have both felt the pinch caused by the loss of time due to minor skin illness, which *in toto* creates a major problem. As a consequence a good deal of attention has been focused upon scabies and its complications. The purpose of this report is to call attention to an improved method of dealing with impetigo, a method which materially reduces the length of treatment.

Choice of Drug for Local Therapy

Accepted treatment to-day consists in the use of three chief groups of drugs—the mercurials, the organic dyes, and the sulphonamide compounds. In choosing a satisfactory agent for the local therapy of impetigo one should demand the following qualifications: rapid action, ease of application, freedom from local irritation and systemic toxicity, and non-staining to bedding and clothing. The success of local therapy depends upon two conditions: (1) contact between the drug and the infectious agent, and (2) bactericidal potency of the drug employed. The former is generally interfered with by crust formation, and the latter by the choice of a preparation which is not actively lethal for all of the organisms that may be present. The importance of softening and removing crusts as a preliminary cannot be over-emphasized, and will be referred to again. The point concerning the choice of a proper chemical agent leads directly to a consideration of the bacteriology of impetigo, a matter which is still in need of clarification. Although *Str. pyogenes* is more constantly

found in association with impetigo than is any other organism, its aetiological significance is not always certain. Cruickshank (1941) recently reported on the bacteriological findings of 23 patients, and stated that 18 of the 23 showed *Staph. aureus*. He states that "the staphylococcus was regarded, rightly or wrongly, as a secondary invader."

Bacteriological examination of 25 patients suffering from impetigo revealed interesting results, quite in keeping with the findings of others. As will be pointed out, these findings led to the adoption of the treatment noted in this report. Briefly, the 25 patients gave the following cultural results: haemolytic streptococci (pure culture) in 12 cases; *Staph. aureus* (pure culture) in 8 cases; and a combination of these two organisms in the remaining 5 cases. Thus, in addition to haemolytic streptococci, it can be said that *Staph. aureus* was present in half of these cases. Whether or not it is present as a "secondary invader" is important from the standpoint of epidemiology but is of no consequence from the point of view of selecting local therapeutic agents. If the organism is present in abundance, then it must be dealt with, even though it did not initiate the process. It was therefore decided to use sulphathiazole locally to determine its effect, and to compare this effect with a commonly used mercurial preparation—namely, ammoniated mercury. Previous personal clinical experience with sulphanilamide and sulphapyridine employed locally in skin sepsis has been encouraging, and published reports have indicated the usefulness of these two sulphonamides for impetigo. Sulphathiazole was chosen in preference because it is effective against the staphylococcus as well as against haemolytic streptococci. The question of which of these two organisms is the primary invader must yield to the question of which of the sulphonamides will prove most effective in clearing up the lesions. MacKenna (1941) has found sulphapyridine superior to sulphanilamide. Carslaw and Swenarton (1941) used sulphanilamide ointment with some success, although they employed it for only two days and then changed to other methods; their ointment is a complex one, consisting of 5% sulphanilamide in glycerin, adeps lanae anhyd., and paraff. molle flav. As will be pointed out again below, a simple ointment of 5% sulphathiazole in paraff. molle flav. was used in the present study, and was employed throughout the treatment rather than being stopped in two days. Since this study was completed a report of the use of sulphathiazole locally for impetigo has appeared in the American literature (Sams and Capland, 1941). The authors used 10% sulphathiazole in a cod-liver oil ointment base. Their experiences are similar to the ones reported herewith, using 5% sulphathiazole in paraff. molle flav., and one wonders whether 10% is actually needed or whether the addition of cod-liver oil is of any value. From the standpoint of economy (more especially during these times), the unnecessary use of drugs and vehicles should be spared wherever possible. An even more recent report (Keeney *et al.*, 1941) gives the results of treating 12 children with impetigo using 5% sulphathiazole made up in equal parts of hydrous wool fat and vanishing cream. Those authors state that "after forty-eight hours definite improvement was noticed in each child." This is identical with the experience in the 51 children who are the subject of my report. It appears that the base employed makes little difference to the duration of treatment.

A Series of Cases treated with Sulphathiazole

Accordingly, 51 cases of impetigo were treated in the Eastern Hospital (L.C.C.) during July and August of 1941. These patients were all children, most of whom were suffering from one or other of the common infectious diseases

in addition to the skin trouble. It was possible not only to determine the length of time required to clear impetigo with sulphathiazole ointment but also to compare its clinical effect with that of dilute ammoniated mercury ointment. The principal distribution of the impetiginous lesions is shown in the following table.

Table showing Chief Distribution of Impetigo in 51 Cases

*Generalized	..	..	23	Trunk	..	..	..	4
Face	..	..	10	Limbs	..	..	..	4
Scalp	..	..	7	Ears	..	..	..	3

* Cases in this group were suffering from impetigo alone or in combination with scabies.

The plan of treatment was somewhat as follows: Instructions were given for all crusts to be softened and removed. This was done by applying tinct. sapo moll. (B.P.C.) to the lesions with the aid of a face-flannel. This was considered important, and was done for all patients regardless of which ointment was to be subsequently applied. Those patients with generalized impetigo were soaped and soaked in a warm tub if their clinical condition permitted. Twenty cases of severe generalized impetigo, some two-thirds of which were scabious, were then treated as follows: to one half of the body there was applied ung. hydrarg. amm. dil. three times daily, and to the other half 5% sulphathiazole ointment, also three times daily. The latter ointment was prepared simply by incorporating 5% by weight of powdered sulphathiazole in a base of paraff. molle flav. This preparation is easy to make and the drug is rather evenly dispersed in its base, although flecks of the chemical can readily be seen through the ointment. The results of this comparative study were most illuminating. After the second day of treatment it was always easy to state which preparation had been used on each side of the body. Impetigo treated with ammoniated mercury healed rather slowly though steadily, requiring an average of eight days. Impetigo treated with 5% sulphathiazole ointment showed improvement in forty-eight hours and was healed by the fourth or fifth day. Thus the time of treatment was reduced almost by a half.

In addition to the above-mentioned 20 cases, 31 patients were treated with 5% sulphathiazole ointment without attempting a comparison. These patients' lesions closely followed the course of the above—namely, noticeable improvement in forty-eight hours and healing in four to five days. Impetigo of the hairy scalp is more resistant, and a group of 7 patients required an average of eight days for healing. This, however, is a considerable improvement on other remedies in general use. Another matter arising from this investigation concerns the common combination of impetigo and scabies. It was found that treatment of the parasitic infestation was greatly facilitated by clearing up the impetigo first. Antiscabies therapy could then be carried out more efficiently, with less discomfort to the patient and few recurrences. To apply sarcopticides in the presence of widespread sepsis is urged by some, but is actually impracticable and extremely uncomfortable.

Summary

An investigation was undertaken to determine an improved method of dealing with impetigo. The report concerns results achieved with 51 children treated in hospital.

Comparison was made between the clinical effects of 5% sulphathiazole ointment and ung. hydrarg. amm. dil. The former induces healing in approximately half the time taken by the latter.

The importance of removing the crusts of impetigo lesions before the application of antiseptics is stressed.

The advisability of treating the impetigo of scabious patients before antiscabies therapy is discussed.

Local therapy with sulphathiazole is considered to be, at present, the ideal treatment for impetigo.

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Medical Memoranda

Meningococcal Meningitis in Advanced Pregnancy

The following case of meningococcal meningitis occurring late in pregnancy, with premature birth, is of interest. It was complicated by an abnormal mental condition, retention of urine, pyelitis, and a generalized eruption. The abnormal mental condition is of significance with regard to the view put forward that cerebral symptoms may be caused by sulphapyridine; the infant seemed to be unaffected by this drug.

CASE HISTORY BEFORE LABOUR

A housewife aged 35, said to be six months pregnant, became ill at home on April 1, 1941, with headache and vomiting. She was admitted to hospital on April 5 rambling, and in a restless condition, with pronounced head retraction and a positive Kernig sign. Lumbar puncture was performed, and 20 c.cm. of turbid cerebrospinal fluid under pressure was withdrawn. Four 0.5-gramme tablets of sulphapyridine were given, and the patient was immediately transferred to the Watford Isolation Hospital. Examination of the cerebrospinal fluid showed 10,000 white cells per c.cm. (98% polymorphs and 2% lymphocytes) and large numbers of Gram-negative diplococci; cultures yielded a pure growth of *Neisseria meningitidis*, Group I.

On admission to the isolation hospital (April 5) the patient was found to be in the above condition; the temperature was 102°, the pulse 108, and the respirations 28. She was given an intramuscular injection of 5 c.cm. of soluseptasine daily for four days and 1 gramme of sulphapyridine four-hourly, the total dosage during this period—i.e., until April 8—being 20 c.cm. of soluseptasine and 20 grammes of sulphapyridine (this total includes the tablets taken before admission to the isolation hospital). She was also given morphine, paraldehyde, and phenobarbitone for her restlessness, which at night tended to become troublesome. The temperature varied from sub-normal to 102° on the first day, and then gradually dropped until on April 9 it was below normal. The pulse and respiration rates remained at about 108 and 28 respectively. Her general physical and mental condition improved to some extent, but did not become normal.

On April 10 she developed retention of urine and had to be catheterized. The urine was acid in reaction, with albumin present: examination revealed a few red cells, pus cells, and granular casts; culture yielded one colony of *B. coli*. Tenderness over the bladder and kidneys was suspected, but was not elicited definitely because of the mental condition. During the next few days the temperature gradually rose, reaching 100.4° on April 13, and, paradoxically, the pulse and respiration rates fell to normal. Her restlessness, confusion, and nocturnal delirium continued and were found to be complicated by some bilateral deafness, present before the onset of the illness.

Ante-natal examination showed the uterus to be 1½ to 2 inches above the umbilicus; the small foetus was active, and the foetal heart was clearly heard, the rate being 140. The stage of development was put at 30-32 weeks. The blood pressure was 150/95. The pelvic measurements were normal, and vaginal examination revealed no abnormality.