SALOL IN SMALLPOX *

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The recent epidemic of smallpox in this section of the country gave us an opportunity to make some interesting observations as to the action of phenyl salicylate in this disease. This synthetic drug was suggested for use by one of our colleagues (J. A. K. Birchett, M. D.) to whom we are greatly indebted for cooperation.

The prevention of scarring covers an interesting chapter in the literature. Various measures have been pursued with varying success. Among the most popular are exclusion of light, local use of iodine, mercuric chlorid, boric acid, oils, glycerin, potassium permanganate or phenol.

It so happened that a member of our nursing staff who had been vaccinated was unfortunate enough to autoinoculate herself on a previous herpes about the lip, thus developing vaccinia of the lip. She was given 10 grains of salol four times a day, and the end result in four weeks was that no scar could be noted on the lip, while the original vaccination on the arm was evidenced by only a small scar.

A study was then made of the discrete and confluent forms of the disease. Salol, 10 grains four times a day was the sole medicament used, and careful observations were made of results. It was noted that the patients who began the medication in the preeruptive stage were left with only a few scars, and even those receiving the medicament during the eruptive stages showed less scarring than those who received no therapy. The severe confluent forms left a surprising aftermath. Some scarring, of course, remained as a remnant of the disease, but far less disfigurement than is usually seen in such cases.

In view of the epidemic, we were on the lookout for cases to develop in the institution. When a patient had a sudden rise of temperature, headache, lumbar pains and rapid pulse, and yet appeared well, salol was administered. After several doses the patient began to sweat, and as the drug was continued, the sweating became more profuse and continued so until the eruptive period. During this period there was some sweating, but considerably less than in the preeruptive stage. It was also observed that the temperature of patients treated with salol was lower than in those not treated with this drug.

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STUDY OF THE DRUG

Salol or phenyl salicylate is ordinarily used to disinfect the intestines. It is insoluble, but is decomposed in the intestine by the fat-splitting ferment of the pancreatic juice into salicylic acid and phenol. It is known that the salicylates have some antiseptic action, especially salicylic acid because of the acid ion. The drugs are eliminated in small amounts in the perspiration, and as perspiration is increased following the administration of phenyl salicylate in smallpox, it is fair to assume that greater amounts are being eliminated through the skin channels.

Salicylates prevent the breaking down of protein material, and preserve parts exposed to the air for a long period.¹ Phenol has a similar action, but is less stable. Cushny¹ remarks that the movements of plant protoplasm, protozoa and leukocytes are prevented by salicylic acid. It also retards digestion of the proteins by the gastric and pancreatic juices.

In smallpox, and more especially during the preeruptive stage, we have an increased elimination of two antiseptics whose action influences the disease. They both prevent protein decomposition, and when coming into relation with the lesions or with their oncoming location exert this special influence. The skin proteins are saved from destruction and little scarring occurs. Added to this factor, salicylic acid prevents the movements of leukocytes, and in this way accounts for the small pustule noted when salol therapy is used.

CONCLUSION

Salol (phenyl salicylate) as an internal medicament in smallpox diminished the degree of scarring. The best results were obtained when the drug was commenced in the preeruptive stage.

1. Cushny: *A Text-Book of Pharmacology and Therapeutics*, Philadelphia: Lea and Febiger, 1915.