CLINICAL EXPERIENCES WITH METHOXSALEN IN SUNTANNING

JOSEPH A. ELLIOTT, JR., M.D.

Charlotte, North Carolina

In 1955, Lerner reported (1) "that oral intake of 8-methoxypsoralen followed by exposure to sunlight markedly increases the ability to tan. The latter does not result from a simple lengthening of the time that one can be exposed to sunlight but represents an actual potentiation of tanning capacity." Fitzpatrick et al. (2) and subsequently Arnold (3) and Becker (4) reported similar results.

Clinical evaluation of the treatment of vitiligo with oral methoxsalen confirmed these findings to the extent that it was apparent that those patients who did not show an unusual degree of tanning of the normal skin were not following the treatment regimen properly.

A double-blind placebo control study was undertaken on 34 normal young adults, five males and 29 females. Four males and four females did not complete the study. Each subject ingested two 10 mg. capsules two hours before exposure to sunshine at noon daily for two weeks. Seven subjects were given a second lot of the capsules: four the alternate capsule and three the same capsule they had previously taken. In no instance did the subject or I know the identity of the capsule he was taking.

Two of 11 or 15 per cent of the subjects receiving placebos felt that they had greater than normal tanning during the test period. Of the 19 subjects receiving methoxsalen, 15, or 80 per cent, felt they received an increased degree of tanning. Each of the four subjects receiving both capsules felt they had no increased tanning with the placebo and increased tanning with methoxsalen. One subject received the placebo in both test periods and developed no increased tanning either time. However, each of the two subjects receiving methoxsalen in both test periods reported increased tanning in the first test period but not in the second. Three subjects receiving methoxsalen reported they tanned well for the first time in their lives and two reported that they were able to be in the sun without burning for the first time. One subject who had previously had a polymorphous light eruption with exposure to sunlight had none. One subject stopped treatment because of itching although there was more tanning than usual.

Of the 13 patients with vitiligo treated with methoxsalen who used a General Electric R.S. Sunlamp during the winter, none showed significant tanning of the normal skin as compared with the degree attained with exposure to natural sunlight in the summer.

A controlled study was carried out on two subjects using methoxsalen topically with exposure of the skin to ultraviolet light. In one instance, a one per cent methoxsalen solution was applied to a four square inch patch on the back and exposed to sunlight for 15 minutes. This area became vesicular within 24 hours and there was residual hyperpigmentation for more than nine months. A similar area without methoxsalen was exposed to sunlight for 45 minutes with only slight erythema resultant in 24 hours. On the other hand, a similar test with one per cent methoxsalen solution, but using a Fisher "cold" Mercury arc lamp (2000-2600 Å), Model no. 88C and a Burdiek quartz Mercury ultraviolet lamp (3000-3200 Å), Model no. QS-450-N resulted in no visual difference between the areas painted with methoxsalen and those not painted.

Interestingly, two patients with vitiligo reported a persistent, increased sensitivity to sunlight after treatment of their vitiligo with methoxsalen for eight months in 1954 and 1955.

SUMMARY AND CONCLUSIONS

This study confirms previous report, that oral intake of methoxsalen followed by exposure to sunlight increases the ability to tan through potentiation of the tanning capacity.
REFERENCES


