THE TREATMENT OF ACNE WITH TACE*

Roy L. Kile, M.D.

Although many factors have been cited as the cause of acne, it has become apparent that hormonal influences play a major role in its development. Hamilton (1) presented convincing evidence that testosterone propionate would produce acne in susceptible individuals and pointed out the absence of acne in eunuchs. It has been found, too, that the administration of ACTH and cortisone, both of which have androgenic qualities, is followed in some cases by the development of acne (2). While a preponderance of androgenic hormones is often followed by acneform eruptions, it cannot be stated categorically that such excesses in themselves account for the disturbance because there is a concomitant alteration of the estrogen—androge ratio. In a number of patients suffering from acne, it was found (3) that there was a moderate increase in the urinary excretion of androgen and a moderate decrease in the urinary excretion of estrogen which resulted in altered ratio. On the other hand, Lawrence and Werthesen (4) noted a decrease in urinary estrogen with no significant change in the excretion of urinary androgen, but they felt that the resulting increased ratio of androgen to estrogen was the responsible inciting factor. The occurrence of premenstrual exacerbation of acne is well known and has been ascribed to the fact that at this period during the menstrual cycle, estrogen levels are at their lowest and, as a result, the androgen—estrogen ratio is elevated (5–7).

In an effort to restore the endocrine balance, estrogens have been administered to patients suffering from acne, with varying results. Sulzberger (2), reporting on the therapeutic effect of female sex hormones in refractory cases of acne, stated that in one-third of these patients such hormones were a valuable adjuvant, but untoward reactions occurred in a large number of cases. Nausea, delayed menses, prolonged flow and "spotting" were often so severe that it became necessary to stop the treatment. In a small series of cases, others reported good (8, 9) and bad (10, 11) results following estrogen therapy.

A new synthetic estrogen, TACE, has been given therapeutic trial in a number of patients suffering from acne. TACE differs from other commonly used estrogens in several respects. After oral administration it is stored in the body fat from which it is released slowly over a period of time (12, 13). In experimental animals, the administration of other estrogens has been shown to produce hyperplasia of the adrenals, but following TACE this effect is minimal (13, 14). This is of some importance in the treatment of acne, a condition in which a relative excess of androgenic steroids is considered to be an important causal factor. In addition, the use of TACE is reported to produce very few undesirable side effects (15).

* TACE (chlorotrianisene(tri-p-anisylchloroethyrene)) kindly furnished by The William S. Merrell Co.

Received for publication April 17, 1953.

79
EXPERIMENTAL

Forty patients were given the drug (see Table I). All of these cases were young females except for three males. Nearly all were given 12 mgs. per day. Since there may be storage in fat with gradual release, a few of the patients were given the remedy throughout the cycle as well as just during the post-ovulatory phase. The chart shows the effects of its administration. Many of these patients were given topical applications simultaneously, and some of them had x-ray therapy.

### TABLE I

<table>
<thead>
<tr>
<th>NO. CASES</th>
<th>EFFECT ON MENSES</th>
<th>WHEN GIVEN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Menses altered in time</td>
<td>Dysmenorrhea</td>
</tr>
<tr>
<td>40</td>
<td>15</td>
<td>6</td>
</tr>
</tbody>
</table>

#### RESULTS

<table>
<thead>
<tr>
<th>Flare Premenstrually, 20</th>
<th>Discontinued due to marked irregularity of menses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marked Improvement</td>
<td>Discontinued due to dysmenorrhea, 3 cases</td>
</tr>
<tr>
<td>Improvement</td>
<td>Had to have D and C, 1 case</td>
</tr>
<tr>
<td>Same</td>
<td>Increased sexual activity and spotting between periods in 1 case</td>
</tr>
<tr>
<td>Worse</td>
<td>Missed two periods, 2 cases</td>
</tr>
<tr>
<td>Other Reactions</td>
<td>Given to three males who were unimproved</td>
</tr>
</tbody>
</table>

#### DISCUSSION

Certainly this is not a cure for acne. Lynch (11) has demonstrated that many with acne improve with no therapy. Of course, there are many factors involved. Concomitant therapy, the age group observed, and even the temperature and humidity are factors. Even with adequate controls, it is difficult to appraise such a therapeutic agent in this disease. Many patients seemed to improve while under observation.

The effect on the menses was less when the drug was given during the post-ovulatory phase of the menstrual cycle than through the entire cycle. Then, too, this effect seemed less after the drug had been taken for several months than for the first few months. These young females seem to adapt to the added estrogen. Perhaps the dose was too large. Maybe smaller doses would have had as good or better effect on their acne with less effect on the menstrual cycle. Several girls who developed tender breasts while on other estrogens did not do so on TACE. Reactions certainly were no higher on this estrogen than on previ-
ously tried chemicals; as a matter of fact, they were somewhat less, but still occur. The three males taking the drug showed no improvement.

The exact approach to acne is still to be found. It appears likely that more than one factor is at work (16).

REFERENCES

15. BICKERS, William: Clinical report on the oral depot effect of TACE in the menopause. Ibid.