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Correspondence

INDOKLON CONVULSIVE THERAPY

DEAR SIR,

We would like to comment upon the pilot study of Indoklon by D. R. Gander and others (*Journal*, December, 1967, p. 1413). This "pilot study" is referred to as an "investigation . . . designed to evaluate Indoklon in terms of (*a*) therapeutic action and safety in comparison with E.C.T., (*b*) technique of administration, (*c*) side-effects, (*d*) convulsant properties."

Method: "Alteration (of convulsant agent) at weekly intervals until maximum improvement"; how is the efficacy of mixed methods evaluated? May we suggest that it would have been better to establish a routine satisfactory technique of administration before embarking upon a trial of clinical efficacy?

Patients: "Had not had E.C.T. in the preceding month." Does this mean patients who had been treated more than a month previously but relapsed? If so, what was the number and frequency of the earlier treatments—and the prognosis when included in this study?

Technique of Administration: "Standard E.C.T. procedure." Does this mean the electrical output of the apparatus was constant for each treatment? If so, how was this achieved with the apparatus mentioned? If not, what was "standard"?

The Inhalation Apparatus (*Fig. 1*): Some unfamiliarity on the part of the authors with the inhalation apparatus is implied by the fact that the photograph shows the vaporizing chamber upside down. With the doses of Indoklon used, it is certain that liquid inhalant would find its way into the mouth and nose if the apparatus were indeed applied in this way.

The authors refer to a "large dose" of 1·5–3·0 ml. and a "standard dose" of 0·5 ml. We have rarely found it necessary to exceed 0·35 ml. to achieve the "all or none" tonic-clonic response. Why use more and induce unnecessary side-effects?

Measurement: (*b*) *Type and Duration:* There should be *no* difficulty in detecting the onset or end of the therapeutic convulsion. (*f*) *Side-effects:* It is not really relevant to comment upon the points mentioned in the face of the gross over-dosage of Indoklon used. Faulty administration and over-dosage would account for most of the side-effects met with.

Serious Side-effects: (Patients) "resisted violently any attempt at interference". Surely the one guiding principle about managing the patient after treatment is the avoidance of interference. The statement that "none of these reactions was directly related to the dose of Indoklon" is in our view inappropriate.

Discussion: No mention is made of drugs which patients might have been taking concurrently. If anti-convulsant anaesthesia is used, namely thiopentone 500 mg. (and if, for instance, the patient is having diazepam) massive doses of Indoklon are needed to induce the fit. "The effective dose" was, in our view, an over-dose.

We think some of the imperfections of procedure might not have arisen if the authors had been familiar with recent work and if their "study" had been differently planned. When they say "so far it (Indoklon) has not been investigated in this country" we feel we should mention the paper on "Flurothyl—a new inhalant convulsive" presented with a short film (by A.W.) to the Association of Anaesthetists of Great Britain and Ireland in November, 1966. (This formed the basis of a paper by us "Flurothyl (Indoklon)—experience with an inhalational convulsant agent" published in *Anaesthesia* in July, 1967; a smaller paper by us on "Flurothyl-Induced Convulsions—two specific indications" was published in the *Clinical Trials Journal* in May, 1967.)

Summary: The authors state "because it (Indoklon) is more cumbersome and attended by more frequent side-effects it is unlikely to become a real alternative to E.C.T."; this is a faulty conclusion based upon the wrong facts. It may not be out of place to remind the authors of modern electroplexy technique (and side-effects) compared with those of 1938.

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DEAR SIR,

I would like to answer the criticisms raised by Drs. Rose and Watson.

Method: We appreciate the limitations of the method, but since this was a pilot study we decided on the method described so that the patients could be used as their own controls. Any alternative method would have necessitated two separate controlled studies.