Carbamazepine and Electro Convulsive Threshold

The points raised by Sharma et al., in their letter "Does Carbamazepine Alter the Electro-Convulsive Threshold" (Journal, 27 173-174: 1985) are topical and interesting. However, the inference..."Carbamazepine may be interfering with seizure threshold and...therapeutic induction of seizures" seems clouded by the following:

The patient was getting lithium 1800 mg., Carbamazepine (CBZ) 800 mg. and Phenobarbitone (PB) 60 mg./day. It is difficult, especially in an epileptic subject, to incriminate CBZ alone out of combination of these three drugs which interact with each other in a complex manner and influence seizure activity. Absence of serum levels of PB and CBZ further limits the experimental design and the scope of extrapolation of the data. In addition, animal experiments indicate that CBZ suppresses kindling process by repetitive sub-threshold electrical stimulation of the limbic structures and propagation of kindled seizure discharge to other brain areas (Wada 1977). On the whole, the evidence to date suggests that the site of action of CBZ is predominantly on the limbic structures rather than the midbrain reticular formation or thalamus.

In the light of these data, and in keeping with the pioneering works of Kobayashi and co-workers (1967) as quoted by Okuma (1983), we feel that..."Carbamazepine produces no significant change in seizure threshold". This conviction is further strengthened by our recent observation on two patients; while on CBZ alone (600-900 mg/day), both could be given ECT with usual voltage and duration as in those patients not on CBZ. The patients reported by the authors might have needed more than average duration and stimulus due to presence of PB. It may well be that the A-B-A-B design the authors employed itself had been responsible for lesser requirement of stimulus and its duration. The altered schedule of CBZ 400 mg. a.m. and afternoon on the day previous to ECT had probably led to a state of relative CBZ withdrawal on the next morning when ECT was given. This withdrawal accentuated further by PB, could have lowered the seizure threshold by producing an altered biological state in a predisposed subject; this was corrected in the next phase when the original t.i.d. schedule was resumed.

It is not quite understandable how..."combined GABA-ergic effect of CBZ and ECT" could be held for the observations reported by the authors.

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