

Correspondence

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ECT, DOPAMINE AND DELUSIONS

DEAR SIR,

We were interested to read the comments of Dr Eagles (*Journal*, June 1984, 144, 670) as these are similar to some raised previously by ourselves (Cooper & King, 1982). We would like to support the view that ECT may have its effects specifically on what might be termed “positive” psychotic symptoms, such as delusions etc., irrespective of whether they occur within the context of schizophrenia, mania or endogenous depression and suggest that this is because ECT reduces dopaminergic transmission.

We have studied the effects of ECT on amine metabolite concentrations measured in lumbar cerebrospinal fluid (CSF) samples collected from 9 schizophrenic patients during a course of 6 ECT treatments (paper in preparation). The patients conformed to standard diagnostic criteria and ECT was given twice weekly using an Ectron Mark 4 apparatus. Lumbar CSF was collected by a standardised technique 24 hours before the first ECT treatment and 24 hours after the first and sixth treatments. A significant elevation ($P < 0.01$, Wilcoxon Test) of HVA concentrations was found after the first treatment but not after the sixth. This previously unreported elevation of dopamine turnover followed by the development of biochemical tolerance was accompanied by clinical improvement and is similar to the time dependent effect of neuroleptic drugs on dopamine turnover (Post & Goodwin, 1975). It can be interpreted as indicating a decrease in dopaminergic transmission with an initial increase in dopamine turnover, mediated through negative feedback mechanisms, to which tolerance then develops, as it does with neuroleptic drugs.

Previous attempts to examine the effect of ECT on dopaminergic transmission through neuroendocrinological investigations in patients have produced conflicting results (Cooper & King, 1982), though some would support our contention, such as the demonstration that serum prolactin concentrations may rise following ECT. Evidence from previous clinical studies also supports our view. ECT is effective in the treatment of schizophrenia and mania, condi-

tions in which increased dopaminergic transmission is important. More intriguing, however, are the results of recent studies of the effects of ECT in endogenous depression, which suggest benefit only (Clinical Research Centre, 1984) or mainly (Brandon *et al*, 1984) in patients with delusions. It has previously been noted that the addition of neuroleptic drugs to other antidepressant treatment aids the recovery of deluded depressed patients (Kaskey *et al*, 1980) implying that increased dopaminergic transmission might have a role in some of their symptoms.

Thus clinical evidence and our present results support the hypothesis that ECT may have a general antipsychotic effect mediated through dopaminergic mechanisms.

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References

- BRANDON, S., COWLEY, P., McDONALD, C., NEVILLE, P., PALMER, R. & WELLSTOOD-EASON, S. (1984) Electroconvulsive therapy: results in depressive illness from the Leicestershire trial. *British Medical Journal*, **288**, 22–25.
- CLINICAL RESEARCH CENTRE, DIVISION OF PSYCHIATRY (1984) The Northwick Park ECT trial. Predictors of response to real and simulated ECT. *British Journal of Psychiatry*, **144**, 227–237.
- COOPER, S. J. & KING, D. J. (1982) ECT and dopaminergic transmission. *Lancet*, **ii**, 710.
- KASKEY, G. B., NASR, S. & MELTZER, H. Y. (1980) Drug treatment in delusional depression. *Psychiatry Research*, **2**, 267–277.
- POST, R. M. & GOODWIN, F. K. (1975) Time dependent effects of phenothiazines on dopamine turnover in psychiatric patients. *Science*, **190**, 488–489.

DST IN MANIA: PROLONGED SUPPRESSION?

DEAR SIR,

The study of cortisol secretion in mania has produced inconsistent results. However, Bunney *et al*