HUMAN PSYCHOPHARMACOLOGY
Hum. Psychopharmacol. Clin. Exp. **14**, 213 (1999)

LETTER TO THE EDITOR

Letters to the Editor

Sirs,

Ondansetron inhibits seizure activity with electroconvulsive therapy: a case report

Ondansetron is an antagonist at postsynaptic serotonin type 3 (5HT3) receptors. It is widely used as an anti-emetic, both in oncology and postoperatively (Wilde and Markham, 1996). Anticonvulsant effects of ondansetron were suggested by the ability of ondansetron to attenuate alcohol withdrawal seizures in rats (Kostowski *et al*., 1994). Granisetron, another 5-HT-3 antagonist, however, showed no effect on reflex epilepsy in the gerbil (Cutler and Piper, 1990). Rare case reports of ondansetron-associated seizures have, however, appeared (Sargent *et al*.., 1993) Ondansetron has been shown to have a modulatory effect on GABA receptors that may underlie its effect on the seizure threshold (Ye *et al*., 1997). We present a case of possible ondansetron-associated inhibition of electroconvulsive therapy induced seizures.

The patient was a 43-year-old female with recurrent major depressive disorder who failed to respond to initially lofepramine 140 mg daily for 3 months and thereafter venlafaxine 300 mg daily for 6 weeks. Her physical examination and investigations including CT head scan, thyroid function and menopausal hormonal screen, were normal. Four ECT treatments were administered. Anaesthetic agents used for all treatments were thipentone sodium (intraval) 250 mg and suxamethonium (scoline) 50 mg. The electroconvulsive charge was supplied by a duopulse (ectron) machine. The application was bilateral for 3 s. During the course of ECT, she continued to receive venlafaxine 300 mg daily, hydroxyzine 25 mg TDS and clothiapine 40 mg nocte per os.

During the first treatment, a satisfactory tonic clonic seizure lasting 30 s, was induced. The patient, however, complained of postoperative nausea. Prior to the second and third treatments, ondansetron 8 mg was given intravenously. Despite two applications of a 3 s charge on both occasions, no seizure was obtained. The ondansetron was omitted prior to the fourth treatment and a satisfactory tonic clonic seizure of 40 s was induced.

This report indicates that ondansetron may have anticonvulsant effects, and suggest that the agent should be used with caution as an anti-emetic prior to ECT. Further controlled data regarding this property would be useful.

C. M. Maud and Michael Berk*
Department of Psychiatry
University of the Witwatersrand
7 York Road, Parktown 2193,
Johannesburg, South Africa

REFERENCES

Cutler, M. G. and Piper, D. C. (1990). Chronic administration of the 5-HT-3 receptor antagonist BRL 43694; effects on reflex epilepsy and social behaviour of the mongolian gerbil. *Psychopharmacology*, **101**, 224–229.

Kostowski, W., Bisaga, A., Jankowska, E. and Krzascik, P. (1994). Studies on the effects of certain 5-HT-3 receptor antagonists on ethanol preferance and withdrawal seizures in the rat. *Polish Journal of Pharmacology*, **46**, 133–137.

Sargent, A. I., Deppe, S. A. and Chan, F. A. (1993). Seizure associated with ondansetron. *Clinical Pharmacy*, **12**, 613–615.

Wilde, M. I. and Markham, A. (1996). Ondansetron. A review of its pharmacology and preliminary clinical findings in novel applications. *Drugs*, **52**, 773–794.

Ye, J. H., Hunt, T., Wu, W. H. and McArdle, J. J. (1997). Ondansetron modulates GABA (A) current of rat central nervous system neurons. *European Journal of Pharmacology*, **337**, 87–94.

*Correspondence to: M. Berk.