being assessed by means of the Abnormal Involuntary Movement Scale (AIMS).

In a preliminary evaluation we analysed the data from the first 16 patients that completed the study (6 male, 10 female, age 51.6 ± 18.6 years). We found a significant improvement in older patients (age > 40 years) on alpha-tocopherol as compared to the placebo group ($p < 0.05$). No therapeutic effects of alpha-tocopherol were observed in the younger patients (age < 40 years).

Up to now age is the only valid risk factor which increases vulnerability for TD. Because the content of alpha-tocopherol in the brain is known to decrease with age, it is tempting to speculate that (1) the decrease of brain alpha-tocopherol with age enhances the susceptibility of elder individuals to the damaging effects of free radicals, resulting in increased susceptibility to neuroleptic-induced TD, and that (2) therefore these elder patients might benefit from high-dose alpha-tocopherol therapy, as found in the present study. However, this working hypothesis certainly needs confirmation in a larger sample before any definite conclusion can be drawn.

V.6

REVERSIBILITY AND IRREVERSIBILITY OF TARDIVE DYSKINESIA FOLLOWING NEUROLEPTIC WITHDRAWAL

A.C. Lahti[1], G.K. Thaker[2], M. Moran[2] and C.A. Tamminga[2]

[1]*Department of Psychiatry, University of Michigan, Ann Arbor, MI, U.S.A. and* [2]*Maryland Psychiatric Research Center, Baltimore, MD, U.S.A.*

Tardive dyskinesia (TD) is a hyperkinetic motor disorder which is thought to be secondary to neuronal changes following chronic receptor blockade by neuroleptics in the basal ganglia. Recently it has been suggested that the process is reversible if the dopamine (DA) blockade is removed. To further explore this issue we carried out a long term follow up (mean = 13.1 months) of 20 TD patients (mean age 43.7 ± 16.1 years), who had been withdrawn from their neuroleptic treatment during the follow up period.

The study demonstrated that 13 patients (65%) showed a decrease in TD, two (10%) did not demonstrate any change and five (25%) had worsening TD. Overall, there was a significant decrease in TD (paired t-test, $p = 0.0118$). The average reduction of TD was $17.9\% \pm 34.7$ overall, but in these 13 patients who improved, the reduction was $37.1\% \pm 22.3$. Significant predictors of decrease in TD included length of withdrawal period (partial $r = 0.63$, $p < 0.01$), male gender ($r = 0.76$, $p < 0.001$), and higher baseline TD score (partial $r = 0.78$, $p = 0.001$).

The results strongly suggest that TD is reversible, although it is not reversible in all cases. Further, since neuroleptic withdrawal is not always possible, the results emphasize the utility of atypical neuroleptics (e.g. clozapine), which exert low or no DA receptor blockade in the basal ganglia.

V.7

THE INCIDENCE OF NEUROLEPTIC-INDUCED AKATHISIA

H. Oberbauer, C.H. Miller, M. Hummer and W.W. Fleischhacker

Department of Psychiatry, University Clinics Innsbruck, Anichstraße 35, A-6020 Innsbruck, Austria

Incidence figures for neuroleptic-induced akathisia (NIA) range from 25 to 75% in the literature. This discrepancy is mainly due to differential diagnostic approaches of the syndrome. All the authors reporting lower incidence figures stress the objective phenomena of NIA, reports that emphasize the subjective component find higher rates. We present a preliminary analysis of an ongoing drug monitoring program of antipsychotic drugs. So far, 55 patients have been evaluated using various side effect rating scales including the Hillside Akathisia Scale. 40% of the sample scored higher than two (small amplitude movements, part of the time) or more on the objective part of the scale, a subjective rating of two (subjective symptoms present and easily controlled) or more was found in 54.28%. Assuming that both phenomena are necessary for the valid diagnosis of akathisia we calculated an incidence of 28.6% (95% confidence intervals, 14.6–46.5%). All patients had developed NIA by the third day of antipsychotic treatment. Our results are comparable to those of earlier reports and reemphasize the need of recognition and adequate treatment of this distressing side effect of antipsychotic drugs.

V.8

DISTURBANCES IN MOTOR DEXTERITY PERFORMANCE OF SCHIZOPHRENIC PATIENTS AS PREDICTOR FOR THE MANIFESTATION OF EXTRAPYRAMIDAL SIDE EFFECTS DURING NEUROLEPTIC TREATMENT

P. Steigleider and W.F. Gattaz

Central Institute of Mental Health, Unit Neurobiology of Functional Psychoses, P.O. Box 12 21 20, D-6800 Mannheim 1, Germany

The tolerance to neuroleptic therapy with regard to the development of extrapyramidal side-effects (EPS) varies widely among schizophrenic patients. The individual vulnerability threshold to EPS has recently been shown to remain stable over time. A number of studies reported an increased occurrence of EPS in patients with structural brain abnormalities as assessed by computertomography. Similarly, a poorer performance in motor dexterity tests was shown in schizophrenics with abnormal CT findings. These data suggest that poor