(—)-DEPRENYL (JUMEX®) IN THE COMBINATION THERAPY OF PARKINSONISM

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Birkmayer and Hornykiewicz in 1963 as well as our group (Gerstenbrand, 1965) successfully used inhibitors of monaminoxidase combined with levodopa in the treatment of Parkinson's disease. The discovery of MAO-isoenzymes had led to the concept of selective inhibition of MAO-B in the drug treatment of Parkinsonism (Knoll et al., 1965). In 1975 Birkmayer and co-workers reported on encouraging therapeutic results with (—)-deprenyl in Parkinson patients exhibiting a decreasing response to l-Dopa therapy and an increase in central side effects. Similar results were reported by Lees et al., in 1977).

At the Dept. of Neurology, University of Innsbruck 30 patients, 16 men and 14 women, aged from 54 to 75 years, have been treated in an open trial with Jumex® since July 1980. The duration of treatment was 2 weeks to 18 months. 28 patients suffered from an idiopathic P.S., 2 from a postencephalitic P.S.

All patients were treated with Jumex® combined with l-Dopa plus decarboxylase inhibitor, 25 because of decreasing response to l-Dopa and increasing l-Dopa side effects, 5 patients because of severe tremor, 16 patients, 8 women and 8 men, suffered from a rigid-akinetic type, 9 patients, 4 women and 5 men, suffered from a rigid-akinetic-tremor or equivalence type of Parkinson's disease, 5 of tremor type of Parkinson's syndrome (Gerstenbrand et al., 1982).

The follow up was made by a doctor's rating scale of 9 items, each of them graded from 0—6, by the North-Western University-Disability Scale and by the depression-scale of Zung.

Table 1. Treatment of Parkinson's disease by Jumex® rigid-akinetic type of Parkinson-syndrome

16 pts.: 8 male, 8 female mean duration of sickness 6.6 yrs. mean duration of l-Dopa treatment 5.1 yrs. mean course coefficient 4.1
Efficacy of Jumex® in
4 of 4 pts. with on-off phenomenon 3 of 6 pts. with on-off ph. + dyskinesias 0 of 1 pt. with akinesia 2 of 3 pts. with akinesia – dyston. foot cramps 0 of 2 pts. in severe akinetic crisis
9 of 16 pts. totally

In the rigid-akinetic group (Table 1) the medium duration of illness was 6.6 years, and that of l-Dopa therapy 5.1 years. In 14 cases the progression of illness was medium, in 2 cases malignant. The average course-coefficient (duration of illness divided by disability) was 4.1. Two of the 16 patients had to be classified as "dyskinesia types", characterized by the occurrence of dyskinesias at low l-Dopa dosage after only a short duration of illness. Jumex® therapy lasted from 12 weeks to 7 months.

The indication of combined l-Dopa and Jumex® treatment was derived from severe on-off phenomena in 4 cases, in 6 cases because of on-off phenomena plus severe dyskinesias. 4 patients suffered from persistent akinesia, 3 of them had also painful foot dystonias, 2 further patients were in a therapy-resistant akinetic crisis.

All of the 4 patients suffering from severe on-off phenomena showed an impressive improvement with Jumex® given additionally to the previous l-Dopa in a dosage of 7.5—15 mg daily. Among the 6 patients with on-off phenomena plus dyskinesias 3 patients improved concerning the on-off phenomena and 2 of them concerning the dyskinesias by a concomitant reduction of the l-Dopa dosis. 2 of the 4 patients with l-Dopa resistant akinesia showed a significant improvement concomitant with a reduction of painful foot dystonias in the morning. 2 patients in a therapy resistant terminal akinetic crisis showed no improvement by Jumex® in a dosage of 15 mg daily.

9 patients represented the equivalence type of Parkinson's disease (Gerstenbrand et al., 1982) (Table 2). The average duration of illness was 7.8 years of l-Dopa medication 5.2 years. The course-coefficient ranged from 3 to 9.5 medium 5.0. The course of illness corresponded to the indifference type in 8 patients and to the dyskinesia type in 1 case. Jumex® was given because of on-off phenomena in 4 cases, on-off phenomena plus dyskinesias in 3 cases and in 2 cases because of therapy resistant akinetic crisis. Duration of treatment lasted from 6 weeks to 18 months.

Table 2. Treatment of Parkinson's disease by Jumex® rigid-akinetic-tremor type (equivalence type) of Parkinson-syndrome

9 pts.; 5 male, 4 female mean duration of sickness 7.8 yrs. mean duration of l-Dopa treatment 5.2 pts. mean course-coefficient 5
Efficacy of Jumex®
3 of 4 pts. with on-off-phenomenon 2 of 3 pts. with on-off-ph. + dyskinesias 0 of 2 pts. in severe akinetic crisis
5 of 9 pts. totally

3 of the 4 patients with on-off phenomena improved considerably as well as a mild improvement of 2 of 3 patients with on-off phenomena plus dyskinesias occurred. 2 patients with severe akinetic crisis showed no response.

5 patients with tremor-dominance-form of P.D. with untreatable tremor and contraindication against beta-blocking agents were treated with Jumex® (Table 3).

3 men and 2 women with a mean duration of the illness of 8.3 years, a mean duration of l-Dopa therapy of 4.9 years and a course coefficient of 5.9 did not show any improvement in a combined therapy of l-Dopa and Jumex® at a dosage of 7.5 to 15 mg over 2 to 4 weeks.

Side effects included loss of appetite and nausea in 4 cases, dizziness in 2 cases. In another 2 patients Jumex® induced moderate dyskinesia, which could be stopped by a reduction of l-Dopa dosage. In two cases of end-stage P.S. mental confusion occurred.

Table 3. Treatment of Parkinson's disease by Jumex® Tremor-dominance type of Parkinson-syndrome

5 pts., 3 male, 2 female mean duration of sickness 8.3 yrs. mean duration of l-Dopa treatment 4.9 yrs. mean course-coefficient 5.9 yrs.
No Efficacy of Jumex® in any pt.

According to our experience with Jumex® in the treatment of Parkinson's disease we conclude:

1. On-off phenomena caused by l-Dopa medication can be improved by Jumex® concerning the frequency as well as the intensity.
2. L-Dopa induced dyskinesias can be reduced by l-Dopa reduction and additional Jumex® application without increase of the akinesia of the patient.
3. In cases of declining l-Dopa efficacy Jumex® can cause a remarkable improvement of the P.S., especially of akinesia.
4. Early morning foot dystonias can be reduced or abolished.
5. Tremor can be ameliorated in only individual cases.
6. According to the results of the Zung-Scale a concomitant depression was diminished in about 50% of the depressive patients.
7. The side-effects of Jumex® are similar to those of l-Dopa. Jumex® should be used on the above mentioned indications as a combination antiparkinson-drug.

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