Laxman Pilotstudy

Study on the impact of audio-visual stimulation with the "Laxman" on average daily intake of diazepam.

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1. Introduction

Primary objective of the study was to measure the impact of the use of the Laxman of Neurotronics GmbH on daily intake of diazepam among 12 patients with mild to moderate anxiety. Patients were divided into three groups according to their diazepam usage: 50mg, 40mg, and 30mg daily. Over a period of four weeks, average usage of diazepam was clearly lowered in all groups.

2. Methods

The Laxman device from Neurotronics GmbH was used for the investigation. The Laxman device provides audio-visual impulses by means of color flashes and earphone sounds The ?deep relax? buit-in session was applied before patients took the prescribed diazepine pill.
The study was conducted over four weeks.

2.1 Study Participants

12 patients participated in the study (5 women, 7 men).
The average age was 46.3 years. All patients were interviewed about their medical history. Only study participants were recruited who showed no contra-indication for LAXMAN use, such as previous transient consciousness disturbances, synkchopes or other evidence of epileptic seizures.
Included patients were presenting chronic anxiety disorders and were taking diazepam daily. Only patients with mild to moderate anxiety (Hamilton Anxiety score from 18 to 29) were included in the experiment.
Patients were divided into 3 groups according to the initial amount of benzodiazepine they were taking:

- Group1: 50mg daily
- Group2: 40mg daily
- Group3: 30mg daily

2.2 Measurement of impact on diazepam intake

A very simple, ?real-life? like procedure was applied. Patients were interviewed every week during four week. At each visit, the same question was asked: how much diazepam did you take yesterday?? In our opinion it was important to use

this hard, non composite creterium to evaluate efficacy of LAXMAN under real-life conditions.

3. Results

As shown in Table 1, a reduction of diazepam intake was observed in all groups.

	Week 0(mg)	Week 1(mg)	Week 2(mg)	Week 3(mg)	Week 4(mg)	Week 4 vs Week 0 (%)
Group 50mg	50	42,5	47,5	40	30	-40%
Group 40mg	40	42,5	35	25	17,5	-56%
Group 30mg	30	27,5	25	17,5	12,5	-58%

4. Discussion

A reduction of benzodiazepine intake was observed in all groups.
Reduction appears to be of a higher range in patients who were taking less pills at the study start (Group 40 and Group 30: more than 50% reduction).
The mode of action is questionable, since 30% of patients fell asleep during sessions, which could explain why they did not need diazepam as waking up.
Further investigation needs to be conducted around sleep disorders.

5. Conclusion

This pilot study on 12 patients showed a reduction of diazepam usage in all groups. Although LAXMAN seems to be more efficient among patients taking low amounts of diazepam (group40 and group30), its efficacy was also remarkable on other patients (group50). Nevertheless, many questions still remain unanswered, related to mode of action (many patients fell asleep during sessions), and reproducibility of
results.
Further experiments are needed on larger populations to confirm these preliminary results on patients with mild to moderate anxiety.

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