

Insomnia and hypnotherapy¹

Professor J A D Anderson MD FFCM

E R Dalton BSc DipMathstats

*Department of Community Medicine,
Guy's Hospital Medical School, London SE1 9RT*

M A Basker MRCS MRCGP

95 The Ridgeway, Westcliff on Sea, Essex SS0 8PX

Introduction

Insomnia is a common complaint in general practice. Unless a feature of psychosis, or accompanied by pain, it is seldom disabling, but is the cause of much misery. In the United Kingdom, the 1970–71 morbidity statistics from general practice showed that, per 1000 of the population, the episode rates of insomnia for males and females were 6.5 and 12.5 respectively, and the consultation rates were 9.2 and 18.0 (OPCS 1974).

Barbiturates have been used to treat insomnia since 1908, but in more recent years they have been misused (Glatt 1969) and are dangerous in overdosage (Setter *et al.* 1966). During the three years 1973–75, there were 4919 deaths in England and Wales in which barbiturates were involved (Table 1). Most of the deaths from barbiturates were the result of determined

Table 1. Deaths involving barbiturates (figures supplied by Office of Population Censuses and Surveys)

Year	Accident	Suicide	Undetermined
1973	316	1055	391
1974	298	1043	332
1975	321	828	335

attempts at self-destruction, and in 80% of cases of barbiturate poisoning the victims never reached hospital. In 1976 a vigorous campaign known as 'CURB' was launched to speed up the reduction in the use of barbiturates. Glutethimide was suggested as an alternative hypnotic, but was found to be an even greater danger to life: one American study found that mortality following drug-induced coma was highest (17%) with this drug (Arieff & Friedman 1973). In recent years newer and safer hypnotics have been developed, of which nitrazepam (Mogadon), a member of the benzodiazepine group, is one.

Many people are prejudiced about even the limited use of hypnotic drugs, and would prefer some other treatment not involving the use of drugs. The clinical use of hypnosis in treating insomnia has been demonstrated by numerous hypnotists since Bramwell (1906), and these include Wolberg (1948), Ambrose & Newbold (1968), Hartland (1966), and Nuland (1975). It is known that while the electroencephalographic characteristics of hypnotized subjects bear no relationship to those of the same subjects sleeping, specific hypnotic suggestions that the patient should go to sleep produce this result with the corresponding changes in the monitoring electroencephalogram (B D Wyke, personal communication). One would assume from this that a subject making autohypnotic suggestions to himself that he should go to sleep might

¹ Accepted 13 March 1979

well do so. It was decided therefore to compare the treatment of insomnia with placebo, nitrazepam (Mogadon) and hypnosis.

Method

Practitioners were invited to participate on the agreement that they would prescribe placebo, Mogadon and hypnosis to each patient admitted to the trial. It was stipulated that patients would be between 16 and 70 years of age, and that they considered they had suffered from insomnia for at least 3 months prior to the trial. It was agreed to exclude patients with pain, obvious endogenous depression and those with more serious nervous disorder, including psychopaths.

The trial was designed so that the first four weeks constituted a double blind trial of Mogadon and placebo. Half the patients were randomly selected to receive 5 mg Mogadon tablets for the first two weeks and placebo tablets of identical appearance for the third and fourth weeks. The other patients received placebo in weeks one and two and Mogadon in weeks three and four. Patients were then given further supplies of the same preparations they were having during weeks three and four, for a further four weeks. During the first half of this further four weeks, i.e. weeks five and six, all patients were instructed in the use of autohypnosis for insomnia, so that they were using this with either Mogadon or placebo until the end of the eighth week. At the end of week eight, all tablets were withdrawn, it being anticipated that full use of autohypnosis alone would be effective. Each practitioner was sent three bottles for each patient numbered serially for weeks one and two, three and four, and weeks five to eight, of the ten-week trial period. Neither doctor nor patient knew whether a particular bottle contained placebo or Mogadon.

At the initial interview, patients were asked whether their insomnia was early; or middle, with restlessness and waking; or late, i.e. early waking and difficulty in getting to sleep again. Causes of insomnia were sought as far as possible. In addition, each patient was given simple advice, such as having adequate physical exercise, avoiding tea and coffee in the late evening and mental overactivity. Patients were also asked about four aspects of their sleeping during the previous week:

- (a) *Average time to go to sleep*, categorized as: 0–30 minutes; 31–60 minutes; over 60 minutes.
- (b) *Average sleep duration*, categorised as: under 2 hours; 2–6 hours; over 6 hours.
- (c) *Quality of sleep*, categorized as: restless; heavy; normal. In the analysis 'restless' was considered the worst, 'normal' the best, with 'heavy' occupying an intermediate position.
- (d) *Waking state*, categorized in order of decreasing desirability as: bright; average; tired.

Patients were issued with diary cards every two weeks and every morning they classified their sleep into one of the above categories on each of these four aspects of their sleeping. At the end of weeks two, four, eight and ten, and before seeing their diary cards, the practitioner concerned questioned the patients on these same aspects and made his own observations and assessment of the average during the past week. He also made sure that patients were carrying out their instructions correctly. He then sent off his own notes with the patient's diary cards for each two-week period to those monitoring the trial, so that any defaulters were noticed immediately, and an opportunity was given to continue follow up.

Hypnosis/autohypnosis

It was stipulated that only experienced hypnotists would participate, that at least four sessions of treatment would be given, and that although a more extensive neurosis might be uncovered, a short-term approach only would be used, but with ego strengthening suggestions, and the use of autohypnosis. No specific trance induction or deepening techniques were stipulated so long as they were suitable for the individual patient.

One of us (MAB) almost always used a simple prolonged relaxation technique, avoiding the words 'hypnosis' and 'sleep', but using the words 'relaxed', 'calm', 'heavy' and 'drowsy'. Deepening of the trance was encouraged with the use of guided imagery so that the patient pictured himself in a warm, safe place – possibly on holiday somewhere pleasant.

Patients unable to visualize scenery intended for trance deepening were instructed to

imagine or feel they were in a warm, dark room, feeling at ease and comfortable. It was sometimes difficult to get patients to use autohypnosis without considerable perseverance. When this was taught, however, patients were told that when they had put themselves into a trance they would be able to give themselves the suggestions that this would pass into a deep, refreshing sleep, waking up at their usual time in the morning, feeling wide awake.

Results

One patient had to be withdrawn from the trial because she had taken an overdose. Of the remaining 18 patients who took part in this trial, all but 2 were female. The ages ranged from 29 to 60 years with a mean of 46.1 years. The duration of insomnia prior to the trial varied between three months and twenty-two years, with half having suffered from it for two to three years. Four patients suffered only early insomnia, 7 suffered early and middle insomnia, 2 middle and late insomnia, one early and late insomnia, and 4 early, middle and late insomnia. There were no significant differences between the group who received placebo first (10 patients), and the group who received Mogadon first (8 patients) on any of the above variables. Most of the patients treated were those who had not attended previously complaining of insomnia, or who had not had treatment for a considerable time.

Four patients had to be excluded from parts of the analysis because their treatment did not conform exactly to the protocol. One patient was not taught autohypnosis until the ninth week because between weeks five and eight she was looking after her grandchildren while her daughter was in hospital. Two patients were given hypnosis during the third week because they had complained that nothing had happened, and so their results for week four have been ignored. One of these had received Mogadon and the other placebo in the first two weeks. One patient was inadvertently not taught autohypnosis until week seven and her results for week eight have been ignored.

It has already been mentioned that the practitioner assessed the average of the patient's sleep categories without seeing the patient's daily diary card for that week. Before analysis the average was considered in the light of the daily diary card and in a few instances was amended because it was in obvious conflict with the daily record. This was done by the statistician without any knowledge of which treatment regime the patient had received. For each measure of sleep there were three possible categories (as already given) which the practitioner used to describe the average of the patient's sleep during the last week and these were scored 1, 2 or 3, with 1 being the least and 3 the most desirable. (It would have been inappropriate to score the patient's daily answers and take a mean since the scores clearly do not possess interval scaling.)

On each of the four measures of sleep, the patients who received the regime starting with the placebo alone were compared at the end of weeks two, four, eight and ten with those patients who received Mogadon first using Mann-Whitney U-tests and Fisher's exact test (Siegel 1956) for the difference between two independent samples. At weeks two and four the effect of the placebo was not significantly different from that of Mogadon on any of the measures. Similarly, at week eight there was no significant difference between autohypnosis and placebo and autohypnosis and Mogadon. At week ten, the effect of autohypnosis was similar regardless of the previous treatment schedules.

The effects of the placebo, Mogadon, autohypnosis with either the placebo or Mogadon, and autohypnosis alone were compared for the group who received the placebo first and similarly for the group who received Mogadon first. These comparisons of treatments within patients should be more sensitive than those between patients. Friedman's 2-way analysis of variance with allowance for ties (Winer 1971) was used as this is appropriate for testing the difference between several treatments when each of these have been received by the same patients. (The test would have been inapplicable if each treatment had been given to a different group of patients.) For a particular measure of sleep, each patient had a score for each treatment and these scores were ranked in order of preference for each patient. Friedman's 2-way analysis of variance assessed whether or not the differences between the

sum of these ranks for each treatment were likely to be due to chance alone if the treatments were equally effective.

In the group which received the placebo first, there was no significant difference between the four possible treatments with respect to the average time to go to sleep (Friedman 2-way analysis of variance, $\chi^2=1.93$, d.f.=3, NS). However there was a significant difference amongst those receiving Mogadon first ($\chi^2=9.08$, d.f.=3, $P<0.05$): the time taken to go to sleep was less while receiving autohypnosis than when receiving either Mogadon or placebo; it made no difference whether or not a tablet was being taken as well. Overall the proportions of patients taking more than 60 minutes to go to sleep were 3/17 and 4/17 while receiving the placebo and Mogadon respectively, 0/16 while receiving autohypnosis and a tablet, and 0/17 while receiving autohypnosis on its own. The numbers taking less than 30 minutes to go to sleep were 7, 10, 11 and 12 respectively.

With regard to the time spent asleep, there were significant differences between the four possible treatments in the group receiving the placebo first (Friedman 2-way analysis of variance, $\chi^2=9.00$, d.f.=3, $P<0.05$). The placebo was the worst and the other three regimes were similar with autohypnosis alone being marginally the best. There were no significant differences between the treatments for those who received Mogadon first (Friedman 2-way analysis of variance, $\chi^2=4.80$, d.f.=3, NS), but there was a tendency for placebo with autohypnosis and autohypnosis alone to result in longer periods of sleep. It was not possible to detect any effect of the order of administration of the placebo and Mogadon and if this possibility is ignored and weeks on placebo, Mogadon and autohypnosis are compared, there is a significant difference between the three treatments, with autohypnosis being the best and placebo the worst (Friedman 2-way analysis of variance, $\chi^2=7.71$, d.f.=2, $P<0.025$). Amongst 17 patients on autohypnosis alone only 3 patients obtained less than 6 hours sleep a night, whereas there were 5 amongst 17 receiving Mogadon, and 10 amongst 17 receiving the placebo. The sleep duration varied between the four treatments in only 9 patients; 7 patients slept longer on autohypnosis and none less when compared with the placebo (binomial test, 2 tailed, $P=0.016$) (Siegel 1956).

The difference in the quality of sleep between weeks two, four, eight and ten (Table 2) was not quite significant in the group receiving the placebo first but was significant for the Mogadon-first group (Friedman 2-way analysis of variance, d.f.=3; placebo first, $\chi^2=7.40$, $0.05 < P < 0.10$; Mogadon first, $\chi^2=10.67$, $P<0.025$). In both groups there was a tendency for more patients' sleep to be normal in weeks eight and ten than in weeks two and four. It was not possible to detect any effect of the order of administration of the placebo and Mogadon and if this possibility is ignored and weeks on placebo, Mogadon and autohypnosis are compared,

Table 2. Quality of sleep during last week

	Placebo week 2, Mogadon week 4/8 (10 patients)			Mogadon week 2, placebo week 4/8 (8 patients)		
	Restless	Heavy	Normal	Restless	Heavy	Normal
Week 2 (placebo or Mogadon)	5	2	3	3	2	3
Week 4 (placebo or Mogadon)●	1	4	4	4	1	2
Week 8 (autohypnosis with placebo or Mogadon)■▲	1	1	7	0	0	7
Week 10 (autohypnosis)▲	0	1	9	0	0	7

● Two patients (one on each regime) excluded since autohypnosis taught in week 3

■ One patient excluded since autohypnosis not taught until week 7

▲ One patient excluded since autohypnosis not taught until week 9

there is a significant difference between the three treatments with autohypnosis being the best and placebo the worst (Friedman 2-way analysis of variance, $\chi^2 = 13.17$, d.f. = 2, $P < 0.005$). On autohypnosis alone only one patient out of 17 did not have normal sleep, whereas the figures were 12/17 and 10/17 with placebo and Mogadon respectively. Comparison between autohypnosis and the placebo showed that in the group who received the placebo first, all 6 whose quality of sleep changed had significantly improved sleep with autohypnosis compared with the placebo ($P = 0.032$, 2 tailed binomial test), and similarly in the Mogadon-first group all 4 whose quality of sleep changed had improved sleep on autohypnosis. When the two groups were combined, $P = 0.002$ (2 tailed binomial test). Similarly, when comparing autohypnosis and Mogadon, all 4 in each group who had a changed quality of sleep were better on autohypnosis; when the results are combined the difference between Mogadon and autohypnosis is significant ($P = 0.008$ (2 tailed binomial test)). Eight had a change in quality of sleep between Mogadon and the placebo and Mogadon was preferred in 6 instances (NS).

With respect to waking state, there was no significant difference between weeks two, four, eight and ten in either group (Friedman 2-way analysis of variance; placebo first, $\chi^2 = 2.23$; Mogadon first, $\chi^2 = 4.24$; d.f. = 3, NS). There was a tendency for autohypnosis to produce a slightly better waking state than either the placebo or Mogadon. Autohypnosis alone resulted in 15 out of 17 patients waking up in an average state and only 2 waking up tired, whereas 8/17 were tired after the placebo and 7/17 were tired after receiving Mogadon. Only 2 patients gave the answer 'bright' on three occasions between them.

Discussion

The trial should have included more patients. However, many difficulties are obvious in conducting a complex trial between hypnotherapy, placebo and Mogadon. In the first place it was difficult to enlist hypnotists prepared to give a drug or placebo when they had already decided hypnotherapy was the treatment of choice – an ethical consideration which cannot be ignored. A large number of patients were thought to be depressed, but many more were suspicious of hypnotherapy and declined to participate. Many patients probably thought that they would be deprived of the one consolation which made their lives tolerable, and refused to have their usual prescription for a hypnotic withheld. The patients treated included all those who were suitable and willing to participate in a ten-week trial including autohypnosis.

Ideally the three treatments, placebo, Mogadon and autohypnosis, should have been rotated at random but it was obviously impossible to prevent a patient using autohypnosis once it had been learnt and so only placebo and Mogadon could be rotated. Only the placebo and Mogadon part of the trial could be made double blind. The effect of treatment in week eight might have been better than that in week four due to a beneficial effect of being taught autohypnosis in conjunction with a tablet. The fact that there were no significant differences between weeks eight and ten suggests that, by the end of the trial, tablets could be withdrawn without any deleterious effect among patients who are willing to participate in such a trial and hence accept treatment by autohypnosis.

The apparent success of autohypnosis in the last week could be due to the effect of participating in such a trial and the discussion that some form of sleeping tablet would be unnecessary by the end of the trial, rather than due to autohypnosis. However, the net result is that by the end of the trial patients appeared to do as well or better without tablets as with tablets, and this is obviously beneficial. It would have been better to compare those receiving autohypnosis at week 10 with another group who had received a general supportive discussion; however this would not be easy. The enlisted hypnotists decided that ethically they could participate since, by the end of the trial, all patients would receive the treatment of choice, but this would not have been so if half the patients had been given only supportive therapy. Also, experienced hypnotists are likely to obtain better results using hypnosis than when using general supportive therapy. If practitioners used their preferred method it would not be possible to allocate patients to treatments at random. It might also be more difficult to recruit patients as they might be even more unwilling to forgo their tablets for general supportive therapy than for hypnotherapy, which may be a more acceptable form of treatment.

The comparisons between the three treatments would have been more effective if less crude measures of sleep had been used. In practice, waking state had virtually only two categories. In a future trial, it would be desirable to devise a five point scale for each of the different measures of sleep. However, it would be necessary to determine whether patients could cope realistically with the extra options when asked to make the selection on their own. In the present trial, many had problems in keeping their diary cards. Closer supervision of sleep could also result in better measures; however, this would have the disadvantage of requiring the patient to sleep in unfamiliar surroundings and this might result in a disturbance of sleep. Also, the results would not necessarily apply to general practice patients in their homes.

Since a large number of significance tests have been performed, one or more of the significant results may have arisen by chance alone and so these should be viewed with caution. The main conclusion is that by the end of the trial autohypnosis on its own appeared to be at least as effective as a placebo or Mogadon; it appeared to be superior as far as the quality and duration of sleep was concerned amongst patients prepared to accept treatment by autohypnosis. A larger trial, including if possible a comparison with general supportive discussion, would be useful to further elucidate the effectiveness of autohypnosis.

Summary

The effectiveness of autohypnosis, nitrazepam (Mogadon, 5 mg) and a placebo were compared in the treatment of insomnia in general practice. Eighteen patients were randomly allocated to receive either Mogadon for two weeks followed by placebo for two weeks, or placebo followed by Mogadon. During weeks five to eight, patients continued to receive the same tablets as they had during weeks three to four and were taught autohypnosis during weeks five and six. Patients continued with autohypnosis in weeks seven and eight, and also in weeks nine and ten by which time all tablets had been withdrawn. Both doctor and patient were 'blind' as to the exact nature of the tablets which a patient was receiving at a particular time. With respect to waking state, no significant differences were found between the placebo, Mogadon and autohypnosis. Patients slept significantly longer when on autohypnosis alone than when they received the placebo. Significantly more patients had a normal night's sleep when on autohypnosis alone than when they received the placebo or Mogadon. There was a tendency for autohypnosis to reduce the time taken to go to sleep. In view of the small number of patients in this trial and the number of significance tests performed, it would be useful if a larger trial could confirm (or otherwise) these results amongst patients willing to accept treatment by autohypnosis.

Acknowledgments: We are grateful to Dr R J Grove-White and Dr D L Pedersen for their contribution to this trial, and to Messrs Roche for their support and assistance.

References

- Ambrose G & Newbold G (1968) *Handbook of Medical Hypnosis*. 3rd edn. Baillière Tindall, London
- Arieff A I & Friedman E A (1973) *American Journal of Medical Science* **266**, 405
- Bramwell J M (1906) *Hypnotism, Its History, Practice and Theory*. 2nd edn. Alexander Moring Ltd., De La More Press, London
- Glatt M M (1969) *Lancet* **ii**, 429
- Hartland J C (1966) *Medical and Dental Hypnosis*. Baillière Tindall, London
- Nuland W (1975) *Proceedings of International Congress for Hypnosis and Psychosomatic Medicine*. Ed. L E Unestahl. Veje Förlag, Örebro, Sweden; pp 113-120
- Office of Population Censuses and Surveys (1974) *Morbidity Statistics from General Practice, Second National Study 1970-71. Studies on Medical and Population Subjects, No. 26* HMSO, London
- Setter J G, Maher J H & Schreiner G E (1966) *Archives of Internal Medicine* **117**, 224
- Siegel S (1956) *Nonparametric statistics for the Behavioral Sciences*. McGraw-Hill, New York
- Winer B J (1971) *Statistical Principles in Experimental Design*. McGraw-Hill, New York
- Wolberg R (1948) *Medical Hypnosis*, vol 1. Grune & Stratton, New York