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THE PREVENTION OF RECURRENT SUICIDAL ACTS

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1 There have been few controlled prospective investigations into the prevention of suicidal behaviour and by and large they have failed to demonstrate the efficacy of social work, psychotherapy or psychiatric treatment.

2 A group of 58 high-risk patients with multiple episodes of suicidal behaviour was treated with mianserin 30 mg at night or placebo in a six month double-blind trial of the efficacy of an antidepressant in reducing suicidal behaviour.

3 Patients were screened for depression, schizophrenia and organic disease. Patients were diagnosed as suffering from personality disorders according to DSM-III criteria mainly borderline or histrionic.

4 There was no significant difference in outcome between the mianserin and placebo treated group at any point in the six month study.

5 An item analysis of the MADRS showed that at entry the item 'reduced appetite' predicted subsequent suicidal attempt. The total MADRS score did not predict further suicidal acts at entry but was highly significant at four weeks. At four weeks the items 'reduced sleep' and 'reduced appetite' were highly significant predictors of further suicidal acts and the items 'lassitude', 'suicidal thoughts', 'inability to feel' and 'pessimistic thoughts' were significant predictors.

Introduction

The increase in attempted suicide in the UK, particularly of overdose over the past 20 years (Office of Health Economics, 1981) has added significantly to the burden on hospital services. Admissions following deliberate self-poisoning have increased more than threefold over this period and now account for approximately 2000 admissions a week in England and Wales. The majority of these patients are not suffering from psychiatric illness but are classified as personality disorders. In Kreitman's (1977) prospective study in Edinburgh personality disorders accounted for 51% of the sample, and depressive illness accounted for only 34%. Of these patients 20% may be expected to repeat their suicidal behaviour within a year and the patients with more than one attempt form a high-risk group. Long-term follow-up intervention studies are comparatively rare in the psychiatric literature. Such studies are expensive, time consuming and difficult to conduct. The possibility of a death during a study has been enough to deter most investigators from undertaking studies in this area. Patients with personality disorders with a history of suicidal behaviour may be geographically unsettled, they tend to have treatment compliance problems, and they are difficult to manage, all of which increases the difficulties of follow-up studies in this group. There have been few controlled prospective investigations into the prevention of suicidal behaviour and by and large they have failed to demonstrate the efficacy of social work, psychotherapy or psychiatric treatment (Table 1). One study (Greer & Bagley, 1971) reported that there was a reduction in further attempts in a group who had intensive psychiatric follow-up when compared with a group which did not return for psychiatric treatment. However in this study random allocation did not occur and the degree of patient self-selection may have affected the results. Chowdhury *et al.* (1973), in a more carefully controlled study, did not find any difference between intensive psychiatric follow-up and the control group.

The only well controlled study to show a significant reduction in suicidal behaviour investigated the efficacy of a neuroleptic. Low dose depot flupenthixol was found to be effective in personality disorders with a history of repeated parasuicide compared under double-blind conditions with placebo (Montgomery *et al.*, 1979). The low dose neuroleptic study was conducted in parallel with the study of mianserin compared with placebo reported here.

The high-risk group of patients with multiple episodes of suicidal behaviour has not been the subject of separate systematic intervention studies although variable numbers of these patients have probably been included in all studies. In our view the high-risk group should be studied because they are likely to be a more homogeneous group, with sufficient morbidity to produce reliable outcome measures. They are a group who suffer greatly and whose relatives and friends also require support.

The phenomena of suicide or attempted suicide

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Table 1 Intervention studies in suicidal behaviour

Psychiatric			
Greer & Bagley (1971)	Retrospective	Follow-up comparing with non-attenders (inadequate control)	Beneficial
Chowdhury *et al.* (1973)	Prospective	Randomized standard or intensive follow-up	No difference
Montgomery *et al.* (1979)	Prospective	Placebo versus neuroleptic, double-blind	Beneficial
Hawton (1979)	Prospective	Domiciliary follow-up or standard outpatient department	No difference
Montgomery *et al.* (1982)	Prospective	Placebo versus antidepressant, double-blind	No difference
Psychotherapy			
Ettlinger (1980)	Retrospective	Previous year (inadequate control)	No difference
Liberman & Ekman (1981)	Prospective	Behaviour therapy or insight-orientated therapy	No difference
Social work			
Oast & Zitrin (1975)	Prospective	Social worker follow-up non-attenders inadequate control	No difference
Gibbons *et al.* (1978)	Prospective	Randomized standard care or intensive follow-up	No difference

are regarded by some authorities as being depressive in origin and although the clinical impression is that antidepressants are not thought to be very effective in personality disorders they are frequently used. This study was designed to test the prophylactic effect of an antidepressant in a high-risk group with a history of repeated suicidal behaviour over a six month period. Since the study was set up not as a specific test of the antidepressant efficacy of the drug but of its efficacy in the treatment of personality disorders with a history of suicidal behaviour, patients with overt depressive illness were excluded. A criticism of previous studies has been a failure to measure the psychopathology adequately and a failure to account for the degree of depression in those entering the study.

Patients and methods

All patients admitted to a medical ward following a suicidal act were screened for the presence of psychiatric illness. Fifty-eight patients (20 male and 38 female) with a history of at least two documented acts of deliberate self-harm prior to the index episode who were not suffering from physical illness, overt schizophrenia or depression were randomly allocated to treatment under double-blind conditions with 30 mg mianserin or placebo. Compliance was checked by tablet count. Patients were followed-up in a specially set up daily clinic with back up from social workers, community nurses and a crisis intervention team. Treatment success was defined as the absence of an act of self-harm during the six month follow-up period, whereas a documented further act of self-harm during the six months was defined as a treatment failure.

Patients were diagnosed as suffering from personality disorders using both the ICD9 and the DSM-III 1979 draft criteria (American Psychiatric Association). The categorization of the personality disorders was based on the phenomenology, social interaction factors and history. Psychopathology was assessed on the Montgomery and Åsberg Depression Rating Scale (MADRS) (Montgomery & Åsberg, 1979) and every four weeks. This study was carried out under the auspices of the Ethical Committee of Preston Hall Hospital.

Results

In the 38 patients who completed the trial there were no significant differences in distribution of

sex, age or number of prior attempts, or diagnoses between the groups (Table 2). Fifty-eight patients entered the study. There were 20 drop-outs—nine male and 11 female.

Table 2 Entry date of 38 patients comparing trial of mianserin 30 mg daily with placebo in the prophylactic treatment of suicidal behaviour

	Mianserin	*Placebo*
n	17	21
Males	7	5
Females	10	16
Mean age	35.1	36.2
(SD)	(12.24)	(13.38)
DSM-III		
301.50 Histrionic PD	6	6
301.83 Borderline PD	14	16
Mean previous attempts	3.6	
Range	2–12	

Using the DSM-III criteria the predominant diagnoses were of borderline and histrionic personality disorders. The summaries of the criteria for these categories are given in Table 3 (and as may be seen the borderline personality disorder is very impulsive and should not be confused with the psychoanalytic borderline schizophrenia concept). Three of the patients in the mianserin treated group and one of the patients in the placebo treated group satisfied the criteria for both histrionic and borderline personality. There was no significant difference between the groups in phenomenology of depression as measured by the mean MADRS on entry to the trial (mianserin 13.5, placebo 12.6).

There was no significant difference in the outcome between the mianserin and placebo treated groups at any point in the six month study. Although there were slightly more suicidal acts in the placebo group, at no point in the study did this reach a trend (Table 4).

To determine which items predicted response or non-response an item analysis of the MADRS was carried out. The point biserial correlation which assigns subjects to one of two groups and is suitable for categorical outcome prediction was used. By the second four week period 12 patients had repeated their suicidal behaviour and therefore the analysis was confined to the entry and four week psychopathology. The total MADRS score on entry was not significantly correlated with further suicidal acts but this was highly significant at four weeks (r_{pbi} 0.52, $P<0.01$). On entry to the trial there was a significant point biserial correlation between the item 'reduced appetite' and further suicidal acts (r_{pbi} 0.37, $P<0.05$; Table 5). At four weeks there was a highly significant correlation between the score on the MADRS items 'reduced sleep' and 'reduced appetite' (r_{pbi} 0.59 and 0.52, $P<0.01$) and further suicidal acts. There was a significant correlation between the MADRS items 'lassitude', 'suicidal thoughts', 'inability to feel' and 'pessimistic thoughts' and further suicidal acts (r_{pbi} 0.40 to 0.34, $P<0.05$; Table 6).

Discussion

The most striking result was the high morbidity in this group of patients. Nearly half (48%) of the patients in the placebo group and 35% of the patients in the mianserin treated group by three months had a further episode of suicidal behaviour. At six months 57% of the placebo treated group and 47% of the mianserin treated group had a further episode of suicidal behaviour. The high repeat rate in this study, which is about 500 times the rate expected for the general population, is in line with the rate reported in the study of flupenthixol in the prophylaxis of suicidal behaviour (Montgomery *et al.*, 1979) which was conducted on patients with the same entry criteria. Our results demonstrate the high morbidity of the group with repeated episodes. It is rather higher than those studies which have investigated a mixed group of patients which has included those who have had only one episode of suicidal behaviour. Many patients with a single episode do not ever repeat their suicidal behaviour and inclusion of these patients may obscure any treatment differences which would be seen in a recurrent group. It would take large numbers in studies over a long period of time to establish efficacy or lack of it for any treatment aimed at preventing recurrence if patients with a single episode are included.

In this study there was no significant difference in outcome in the mianserin treated group compared with the placebo treated group. This is in line with the general clinical impression that antidepressants are not effective in personality disorders. There is however in this study a lower subsequent attempt rate in the mianserin treated group and it is possible that a larger study may demonstrate some effect. In the present study of personality disorders the drop-out rate of 34% seen may have affected the result. One of the difficulties with oral medication in long-term studies is that compliance becomes a problem. The checks on compliance by tablet counts contributed to the high drop-out rate since failures to comply with tablet taking were counted as drop-outs. The drop-out rate was significantly higher in this study compared with the study using depot medication.

Table 3 DSM-III Criteria for Borderline and Histrionic Personality Disorders

Borderline personality disorder

Diagnostic criteria

At least five of the following are required:

1) Impulsivity or unpredictability in at least two areas that are potentially self-damaging, e.g., spending, sex, gambling, drug or alcohol use, shop-lifting, overeating, physically self-damaging acts.
2) A pattern of unstable and intense interpersonal relationships, e.g., marked shifts of attitude, idealization, devaluation, manipulation (consistently using others for one's own ends).
3) Inappropriate intense anger or lack of control of anger, e.g., frequently loses temper, always angry.
4) Identity disturbance manifested by uncertainty about several issues relating to identity, such as self-image, gender identity, long-term goals or career choice, friendship patterns, values and loyalties, e.g., 'Who am I?', 'I feel like I am my sister when I am good'.
5) Affective instability: marked shifts from normal mood to depression, irritability or anxiety, usually lasting hours and only rarely for more than a few days, with a return to normal mood.
6) Intolerance of being alone, e.g., frantic efforts to avoid being alone, depressed when alone.
7) Physically self-damaging acts, e.g., suicidal gestures, self-mutilation, recurrent accidents or physical fights.
8) Chronic feelings of emptiness or boredom.

Histrionic personality disorder

Diagnostic criteria

1) The pattern of histrionic behaviour is indicated by at least two of the following:
   a) Self-dramatization, e.g., exaggerated expression of emotions.
   b) Drawing attention to oneself to obtain admiration.
   c) Perceived by others as shallow and lacking genuineness.
2) Behaviour that is overly reactive and expressed intensely, without reserve, as indicated by at least two of the following:
   a) Emotional excitability in response to minor stimuli, e.g., an impulsive display of affection towards a casual acquaintance.
   b) Irrational, angry outbursts or tantrums.
   c) Manipulative suicidal threats, gestures or attempts.
3) Characteristic disturbances in interpersonal relationships as indicated by at least two of the following:
   a) Superficially warm, charming and appealing.
   b) Demanding and inconsiderate of the wishes of others.
   c) Vain, egocentric and self-absorbed.
   d) Dependent, helpless, constantly seeking reassurance.
4) Poor sexual adjustment as indicated by at least two of the following:
   a) Uninhibited displays of sexuality, e.g., flirtatiousness or coquetry.
   b) Sexual *naïveté* or frigidity.
   c) Indulgence in frequent flights of romantic fantasy.
   d) In both sexes, behaviour that is a caricature of femininity.

Table 4 Outcome of patients treated with mianserin 30 mg daily or placebo

	4 week period					
	1	*2*	*3*	*4*	*5*	*6*
Mianserin ($n=17$)						
Responders	16	12	11	9	9	9
Suicide attempters	1	5	6	8	8	8
Placebo ($n=17$)						
Responders	20	14	11	9	9	9
Suicide attempters	1	7	10	12	12	12
χ^2	0.02	0.07	0.59	0.38	0.38	0.38
			NS			

Table 5 MADRS on entry to the trial as predictor of further suicidal attempts ($n=38$)

	r_{phi}	t	$P<$
Reduced appetite	0.37	2.39	0.05
Inner tension	0.32	2.01	0.1
Reduced sleep	0.25	1.54	
Apparent sadness	−0.22	1.34	
Suicidal thoughts	0.18	1.09	
Pessimistic thoughts	0.12	0.71	
Inability to feel	0.11	0.66	
Reported sadness	−0.09	0.53	
Concentration difficulties	−0.03	0.21	
Lassitude	0.00	0.03	
MADRS score	0.23	1.42	

Table 6 MADRS after four weeks treatment with mianserin 60mg or placebo as predictor of further suicidal acts ($n=38$)

	r_{pbi}	t	$P<$
Reduced sleep	0.59	4.26	0.01
Reduced appetite	0.52	3.59	0.01
Lassitude	0.4	2.55	0.05
Suicidal thoughts	0.36	2.25	0.05
Inability to feel	0.36	2.24	0.05
Pessimistic thoughts	0.34	2.11	0.05
Reported sadness	0.32	1.96	0.1
Apparent sadness	0.31	1.87	0.1
Inner tension	0.26	1.54	NS
Concentration difficulties	0.22	1.33	NS
MADRS score	0.52	3.57	0.01

The dose of mianserin in this study was chosen as the minimum effective dose in order to reduce the risk of suicide in non-responders. There were no deaths during the study. It may be thought that the dose is too low with consequent lack of effect. However there are studies where antidepressant efficacy has been demonstrated even with the low dose (Smith *et al.*, 1978; Montgomery *et al.*, 1980).

The failure to demonstrate that mianserin is effective in this group may be contrasted with the demonstration of efficacy of depot flupenthixol compared with placebo in a smaller group of patients. This suggests that low dose neuroleptics may be more appropriate than antidepressants in this group.

It is a very interesting question whether antidepressants are useful to clinicians in treating patients who have suicidal behaviour but do not appear to have depression. Our results, which are the first systematic controlled investigation of an antidepressant in this area suggest that they are not sufficiently effective. These patients, although not suffering from overt depression, felt unwell, volunteered for treatment and were thought by their attendants to be in need of treatment. Many patients were clearly suffering from irritability, anger, tension and transient mood disturbances. Some of these symptoms would contribute to a score on the MADRS. The definition of the items on the MADRS allowed these transient disturbances to be rated. At entry to the trial the MADRS score did not predict outcome and only one out of ten items, 'reduced appetite', was a significant predictor of further suicidal act. After four weeks of treatment failure to sleep, poor appetite, pessimism, suicidal thoughts, lassitude and a reduced ability to feel emerged as significant predictors of a further suicidal act. It may be that these items of the MADRS allow the registration of the phenomena which our patients were suffering from, which would not be recognized as depression and indeed do not appear to be responsive to an antidepressant.

Patients with repeat parasuicidal acts form a group for which some pharmacological agents appear to be effective and not others. There is sufficient morbidity in this group to make investigations possible and for the results to be pharmacologically interesting. Any possible reduction in suicidal behaviour in a group with such high morbidity is a worthwhile goal.

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