

ELDERLY DEPRESSIVES : USE OF MEDICINES WITH A POTENTIAL TO CAUSE DEPRESSION

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SUMMARY

The prevalence of use of medicines with a known potential to cause depression among 40 elderly depressives and 20 matched controls was studied. Results showed that the prevalence was not significantly different between the two groups. Within the patient group, the prevalence was independent of the variables of sex, nature and severity of depression, and history of previous episodes of affective illness. While the results indicate that depressive illnesses secondary to the use of medicines are not common, the possibility of a medicine rarely inducing depression can not be ruled out.

The physical morbidity of psychiatric patients increases with age (Maguire and Granville-Grossman, 1968), and a high prevalence of physical illnesses has been demonstrated among elderly depressives (Kay and Roth, 1955; Kinzie et al., 1968). The high prevalence of physical morbidity among the elderly invites multiple treatments, thereby increasing the possibility of adverse drug reactions. A wide variety of pharmacologic agents used to treat physical illnesses in the elderly have been reported to give rise to symptoms of depression (Quslander, 1982). Whitlock and Evans (1978) have listed approximately 200 drugs that can cause depression as an adverse effect. But there are no markers which can distinguish an iatrogenic depression from one which is not.

Indian studies have shown depression to be a common diagnosis among elderly psychiatric patients (Ramachandran and Sarada Menon, 1980; Venkoba Rao and Madhavan, 1982). In view of the high physical morbidity among the elderly and the consequent use of medicines, it could be expected that a certain proportion of depressive illnesses occurring among the elderly are secondary to

the use of medicines. If the proportion of such iatrogenic depressive illnesses is large enough to be clinically significant, one would expect to find the use of depressogenic medicines to be significantly more frequent among the elderly depressives than among a comparable sample of general population.

Most of the information in literature regarding the potential of specific medicines to cause depression emerged from case reports and studies on the prevalence of depression among people using such medicines (Quetsch et al., 1959; Wal, 1967; Nolan, 1982). There is a paucity of studies which examined the prevalence of use of depressogenic medicines among people with a diagnosis of depressive illness as compared to the prevalence among the general population. Such information, by providing a rough estimate of the magnitude of the problem, would be valuable in increasing physicians awareness and in altering prescribing practices which might be harmful to the interests of the patient. Kinzie et al. (1986), reported 38% of elderly subjects with a depressive disorder to be using medicines which have a potential to cause depression. However, the significance

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of Kinzie's findings is difficult to assess, as the study design did not include a suitable comparison group to control for the high base rate of physical illnesses requiring use of medicines by the elderly.

The aims of the present study are (i) to study the prevalence of use of medicines with a potential to cause depression, among elderly out-patients with a diagnosed depressive illness, and (ii) to examine if such prevalence is significantly different from that among a group of matched controls.

MATERIAL AND METHODS

The study material was divided into two groups: "patient group" and "control group". The patient group comprised of 40 consecutive patients aged 60 years or above, attending the psychiatry OPD of the All India Institute of Medical Sciences, New Delhi, and diagnosed to have a depressive illness under one of the ICD-9 (WHO, 1978) categories. The control group comprised of 20 subjects aged 60 years or above, group matched with the patient group for age and sex, and having no past or present history of psychiatric illness. They were drawn from visitors coming to see their friends or relatives admitted in the hospital.

All members of both patient and control groups were subjected to the same methodology as described below:

The identification and socio-demographic data were recorded for each subject, using a brief questionnaire. All the subjects were given the semi-structured psychiatric interview. In the patient group this served to confirm the diagnosis of depression and its sub-type as per ICD-9 categories. In the control group it served to exclude the presence of any psychiatric illness either at present or in the past. The severity of depressive symptoms was measured, using the 17-item Hamilton Depression Rating Scale (Hamilton, 1960).

All the subjects were questioned in detail

regarding the use of any medicines excluding those being used to treat the current depressive illness in the patient group. The information was further corroborated by scrutiny of prescription slips, where available. Details regarding the nature of medicines used and duration of use were recorded separately for each subject. Medicines that were not used for a minimum duration of 3 weeks in a month were excluded.

The list of medicines thus obtained was divided into two groups as (1) medicines that have a known potential to cause depression as an adverse effect, and (2) medicines which have not been reported to be causally associated with depression. Placing any given medicine in one of the two groups was based on data available from the literature. Those medicines which have consistently reported in literature as being associated with depression were placed in the first group, while other medicines which have not been so reported were placed in the second group.

The data thus obtained for the two groups was compared on different variables, using the following statistical methods, where applicable:

- Chi—square test with Yate's correction.
- Fisher's exact test.
- Unpaired 't' tests.

RESULTS

The age and sex distribution and other sociodemographic variables of the patient group and control group are shown in 'Table 1'. The two groups did not differ significantly on any of the variables except place of residence, with 87.5% of the patient group coming from an urban location as against 50% in the control group ($X^2=8.1$; d.f. = 1; $p < .01$)

The ICD-9 diagnoses given to subjects in the patient group was MDP depressed type for 28 (70%), MDP circular currently depressed for 6 (15%), neurotic depression for 4 (10%), and depressive disorder not

TABLE 1

	Patients N : 40(%)	Controls N : 20(%)
<i>Sex</i>		
Male	21(52.5)	11(55.0)
Female	19(47.5)	9(45.0)
<i>Age</i>		
Range	60-76	60-74
Mean Age	63.3(SD:4.65)	63.4(SD:4.35)
<i>Place of residence</i>		
Urban	35(87.5)	10(50.0)*
Rural	5(12.5)	10(50.0)*
<i>Education</i>		
Uneducated	14(35.0)	6(30.0)
Literate	8(20.0)	6(30.0)
Above school level	18(45.0)	8(40.0)
<i>Marital status</i>		
Widowed/Seperated	11(27.5)	3(15.0)
Marriage continuing	29(72.5)	17(85.0)

*Difference significant at $p < 0.01$; $X^2=8.1$; d.f.=1.

elsewhere classified for 2(5%). In 20(50%) subjects of the patient group, a past history of having had episodes of affective illness could be obtained. The severity of depression as measured by the Hamilton Depression Rating Scale (HDRS) score ranged from 16 to 37 for the patient group (mean : 23.93; SD : 3.76). For the control group, the range of HDRS scores was from 0 to 6 with a mean of 2.2.

A total of 13 (32.5%) subjects of the patient group gave history of using medicines other than those prescribed for the current depressive illness. Of these, 10(25%) were using medicines with a known depressogenic potential. Among the control group 6(30%) gave history of using any medicines, and of them 3(15%) were using medicines with a known potential to cause depression. The difference between the two groups for the number of subjects with a history of using medicines, or for those using medicines with a known potential to cause depression, was not statistically significant.

The nature of medicines used by subjects in both groups are shown in 'Table 2'. The two groups did not differ significantly for the number of subjects using any single group of medicines or for the number of subjects using more than one group of medicines (Table 2).

TABLE 2. Nature of medicines used by patient and controls.

Nature of medication	Patients N : 40 (%)	Controls N : 20(%)
Anti-hypertensives	9 (22.5)	Nil
Others acting on cardiovascular system	3 (7.5)	Nil
Psychoactive medicines	1(2.5)	2 (10.0)
Anti-inflammatory/		
Analgesics	2 (5.0)	1 (5.0)
For endocrinal dysfunction	2 (5.0)	3 (15.0)
Other	6 (15.0)	1 (5.0)
No. of subjects using more than one group of medicines	7 (17.5)	1 (5.0)

Difference between patient and control groups not significant at $p < 0.05$ level for any of the variables.

The subjects within the patient group were sub-divided based on the variables of sex, nature of depression, severity of depression, and past history of having had episodes of affective illness. The sub-groups on each variable did not differ significantly from each other for the number of subjects using any medicines other than those prescribed for depression, or for those using medicines with known depressogenic potential (Table 3).

DISCUSSION

The study had been restricted to the geriatric age group because the adverse effects of medicines are more likely to be apparent in that age group. The elderly metabolise drugs more slowly, leading to longer plasma half-life. Their lean body mass and impaired functional reserves of brain, kidneys and liver also reduce drug tolerance. In addition, the

TABLE 3. Comparison of subjects within the patient group on different variables

Variable	No. of subjects using medicines other than those prescribed for depression (%)	No. of subjects using medicines with depressogenic potential (%)
<i>Sex</i>		
Male (N=21)	7 (33.3)	6 (28.6)
Female (N=19)	6 (31.6)	4 (21.1)
<i>Nature of depression</i>		
MDP type (N=34)	13 (38.2)	10 (29.4)
Non-MDP (N=6)	Nil	Nil
<i>Severity of depression</i>		
HDRS score above group mean (N=21)	8 (38.1)	6 (28.6)
HDRS score below group mean (N=19)	5 (26.3)	4 (21.1)
<i>Past episodes of affective illness</i>		
Present (N=20)	7 (35.0)	6 (30.0)
Absent (N=20)	6 (30.0)	4 (20.0)

Difference between sub-groups not significant at $p < 0.05$ level on any of the variables.

higher physical morbidity among the geropsychiatric population (Maguire & Granville-Grossman, 1968) causes them to be exposed to the use of medicines more often than would be the case with a younger age group.

The results of the study have shown that the use of medicines for physical ailments was not significantly different between elderly depressives and matched controls without a depressive illness, 25% of the depressives were using medicines with a known potential to give rise to depression. While this was lower than the figure of 38% reported by Kinzie et al. (1986), it did not differ significantly from the figure of 15% found in the sample of matched controls. Since the proportion of depressives and non-depressives using medicines with a depressogenic potential were not significantly different, the data would suggest that among the elderly, depressive illnesses caused by pharmacologic agents do

not have a prevalence large enough to be clinically alarming.

Such a conclusion would be limited by the assumption that the potential of medicines to cause depression is the same on all individuals exposed to such medicines. The conclusion may not hold good if the medicines tend to act selectively and precipitate depression more often among individuals who are already predisposed to develop a depressive illness. To a limited extent, the latter hypothesis can be tested by comparing the use of medicines with a depressogenic potential between depressives with a past history of affective episode and those without such a history. In this study, 20(50%) of the elderly depressives had past history of episodes of affective illness. Among them 6(30%) gave a history of using medicines with a depressogenic potential, which was not significantly different from the figure of 4(20%) for those without a past history of affective illness (Table 3). In clinical practice, a persons' predisposition to develop a depressive illness is best indicated by a previous history of affective illness episodes. However, for a comprehensive evaluation of such predisposition, other factors such as family history, life events, personality and biological markers will also have to be considered. Addressing all these variables requires studies with a different methodology.

Among specific groups of medicines, anti-hypertensives have most often been reported to give rise to depression (Quetsch et al., 1959; Waal, 1967; Petrie et al., 1982). But the clinical relevance of these reports is clouded by the fact that while some of the reports have associated the use of anti-hypertensives to the occurrence of depressive symptoms (Waal, 1967), other have reported on the occurrence of depressive reactions (Quetsch et al., 1959) and depressive disorders (Petrie et al., 1982). In addition most of the studies are based on population exposed to anti-hypertensives and have not been adequately

controlled for the high base rate of depressions among the general population by using a suitable comparison group. In the present study, no single group of medicines was being used significantly more commonly by the patient group as compared to the control group (Table 2). Whether a drug rarely induces an otherwise common illness is difficult to determine (Zelnik, 1987). Thus, the results of this study indicate that use of medicines is at best an infrequent cause of depressive illness among the elderly, since the possibility of a medicine rarely giving rise to a depressive illness can not be ruled out.

CONCLUSIONS

Since depressive illnesses secondary to the use of medicines have been found to be uncommon, there is no reason for extreme clinical parsimony in prescribing medicines reported to be associated with depression. A necessary medicine need not be withheld in order to prevent the possibility of iatrogenic depression since such a possibility is very small. As the role of medicines in inducing depressive illnesses in people already predisposed to depression is not clearly established, it would be prudent to prescribe alternative medicines to people at high risk for developing the illness. To establish whether depressive illness can be an uncommon adverse effect of a medicine, studies with a different methodology and on larger samples of population are required. In view of the elderly constituting a steadily growing segment of the total population as well as the high prevalence of physical and psychiatric morbidity among the aged, there is a necessity for studies which concentrate on the sub-group of geropsychiatric population.

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