

Psychopharmacological Issues in Young Mentally Retarded Subjects

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62 young mentally retarded institutionalized patients were studied for their psychotropic medication both cross-sectionally and prospectively for 10 months. Prevalence of psychotropic use ranged from 19.3% to 23.7% over the study period. Results of a Self-Injurious Behavior Questionnaire, revealed that patients exposed to neuroleptics showed significantly more acting out and self-injurious behavior than those not exposed to such medication, and that these behaviors remained significantly increased during the follow-up period inspite of continued neuroleptic administration. Also, neuroleptic exposed patients differed significantly in IQ and percentage of physical handicap than their non neuroleptic exposed counterparts. The study also discusses ethical issues related to the psychopharmacology of the retarded and suggests recommendations for future research in the field.

(Egypt.J. Psychiat.,1994,17:162-169).

Introduction

The issue of psychotropic drug over-use in facilities for the mentally retarded people has been widely discussed in the literature (Aman 1987). Estimates of psychotropic drug prevalence varied greatly among institutions (range from 13.7% to 63.6% with a mean of 26.8%) (Stone et al, 1989). Dedicated efforts for drug reduction have resulted in very low prevalence rates, the lowest values reported being from a New Zealand institution where psychotropic drugs were used for 19% of the population and antipsychotics for 14%, approximately half the use reported in 1979 from the same institution prior to a concerted drug - effort (White, 1983). However, the great variation in prevalence rates across institutions reflects the need for a greater understanding of factors contributing to psychotropic medication in institutions

for the mentally retarded (Stone et al, 1989), (Tu and Smith, 1979).

In general, demographic variables associated with psychotropic medication included: Sex (Tu and Smith, 1979), Size of institution (Tu and Smith, 1983), but not Age (Stone et al, 1989), (Tu and Smith, 1979).

Clinical variables positively associated with psychotropic drug use include aggressive behavior, IQ, depression and self-injurious behavior, (Stone et al, 1989). Cerebral palsy and epilepsy were found to be negatively associated with psychotropic drug use in some studies (Stone et al, 1989).

As regards psychiatric diagnosis Linaker (1990) found that mentally retarded people with no psychiatric diagnosis consumed less neuroleptics than those with such diagnosis. He also found the dose of neuroleptics related positively to the degree of disruptive behavior and to the availability of a physician.

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Also the field of psychopharmacology of the mentally retarded is beset with many ethical issues (Mouchka, 1985). Some claim that the widespread use of psychotropic medication in the mentally retarded is underpinned by economic and political dangers of medicalizing behavior. Normal people react behaviorally to their environments sometimes with protestations. The same thing is true for retarded people. Until the retarded people are provided with just environments we cannot be sure that treatment is appropriately directed at the source of the problem.

To contribute to knowledge of current status of psychopharmacotherapy in an institution for the mentally retarded by studying a sample of young mentally retarded subjects given psychotropic medication over a certain period of time.

Subjects and Method

The study pool consisted of 62 children and adolescents (ranging from 4 to 18 years of age) present in an institution for the severely mentally handicapped in Al Hassa area in the Eastern district of Saudi Arabia. This institution is the only one in the area and contains facilities for 200 inpatients.

The criteria for admission of any new case were:

- 1-Age from 4 - 45 years.
- 2-Severe mental handicap.
- 3-Free from infectious illness or aggressive behavior.

Services offered included medical supervision, physiotherapy, social services and recreational facilities. No mixing between sexes was allowed, each sex occupying a different section and supervised by a different team. Psychiatric supervision was offered by way of monthly visits by psychiatrists from the near-by psychiatric hospital.

Information gathered from the files of

the patients included demographic data, IQ, presence of epilepsy, presence of different syndromes (e.g. Down's Syndrome) and information regarding psychotropic medication were taken verbally from the doctor in charge in the institution.

1. As used here, the term psychotropic is based on Stone, et al's (1989): Definition psychotropic refers to psychoactive medications prescribed specifically to modify behavior. These include six therapeutic drug classes: Antipsychotic, Antidepressant, Anxiolytic, Sedative/Hypnotic, Stimulant and "other". Drugs that are psychoactive (i. e. affecting the C. N. S.) but not psychotropic are not included (e.g. anticonvulsants prescribed for epilepsy). Lithium is classified as other in scheme. Antidepressant refers only to monoamine-oxidase inhibitors. Antipsychotic drugs include: Phenothiazines, Thioxanthenes, Dibenzazepines, Butyrophenines and Indoles.

Patients were exposed to physical examination to diagnose the presence of different syndromes, physical handicaps and signs of self-injury.

Results

The total number of patients was sixty two, twenty three males and thirty nine females. Their mean age was 13.45 years (S.D.= 3.75 years) and the ratio m/f = 0.589. Number of patients with mild mental retardation was one (1.6%), with moderate mental retardation fifteen (24.19%), with severe mental retardation twenty two (35.48%) and with profound mental retardation twenty four (38.7%). Forty patients (64.5%) had physical handicap. This consisted of paraplegia (8 patients), quadriplegia (16 patients), hemiplegia (4 patients), microcephaly (seven patients), hypotonia (2 patients), congenital cataract, retinopathy and polydactyly (3 patients). Three patients had Down's Syndrome.

Table 1
Comparison Between Neuroleptic Exposed and Non Neuroleptic Exposed Groups

Neuroleptic Exposed Gr. (n=20)		Non-Neuroleptic Exposed Gr.(n=42)
1. Age	Mean = 14. lyr. (S.D. $\pm$ 2.7)	Mean = 12.61. (S.D. $\pm$ 3.3.)
2. IQ	Mean = 28.55 (S.D. $\pm$ 10.1643)	Mean = 21.5 * (S. D. $\pm$ 10.8)
3. M/F	10 / 10	13/29
4. P. H.	35%	78.5%**
5. D. S	10%	2.38%
6. D. I	Mean = 4.4 yr. (+or1.7)	Mean = 4.2 yr. (+or - 2.07)

P. H = Physical Handicap. Down s Syndrome. D. I. = Duration of Institutionalization

* Significant at 0.02 level ($t = 2.4$, d.f. = 60, $p < 0.02$)

* Significant at 0.01 level (chi square =13.2, d. f. = 1, $p < 0.01$)

The mean duration of institutionalization for the sample was 4.3 years (S.D. $\pm$ 1.95). Thirty one (50%) of the patients were epileptic. Eleven (17.7%) of the patients were currently on neuroleptic medication in the initial phase of the study and nine (14.5%) had history of previous neuroleptic exposure. One patient was currently on a sedative hypnotic and another one was previously exposed to a tricyclic antidepressant. The prevalence of total current psychotropic medication was thus 19.3%.

The mean current dose of neuroleptic / kg was 2.73 mg / kg ($\pm$ 2) of chlorpromazine equivalents (mean total amount = 116.8 mg ($\pm$ 85.8) of chlorpromazine equivalents). Thioridazine was the only neuroleptic used in those currently exposed to neuroleptics, while in those previously exposed it accounted for 77.8% of the prevalence. The remaining 22.2% of the latter group were given haloperidol.

The mean duration of neuroleptic exposure in the currently exposed group was 2.5 years (S.D. $\pm$ 1.66) while the mean for the previously exposed group was 0.63 years. The difference was significant at the 0.05 level ($t = 2.55$, d.f. = 14, $p < 0.05$). The mean time interval

since the last use of neuroleptics in the previously exposed group was 1.7 year ($\pm$ 1.5).

The drug free group consisted of twenty three patients (10 males, 13 females). Their mean age was 12.3 years (S.D. $\pm$ 2.98). Table (1) shows a comparison between characteristics of the neuroleptic exposed group (current and previous exposure) and the rest of the sample.

As we see from the table significant differences were found in the IQ and physical handicap items between the neuroleptic and non - neuroleptic exposed groups.

The most common indications of neuroleptic administration according to the caring staff were as follows: Hyperactivity (35%), aggressive behavior (30%), unspecified disturbing behavior (10%) and screaming, irritability and restlessness, masturbation and emotional lability each (5%). The patient currently receiving a sedative hypnotic was a female taking diazepam mainly for sleep disturbance for a duration of 3.5 years. Also the patient previously exposed to antidepressant was found to have received imipramine which was stopped one and a half year before the study began.

As regards the Self Injurious Questionnaire (SIB) significant differences were found in the acting out behavior domain between the neuroleptic exposed group and the non - neuroleptic exposed group, the former group scoring significantly higher ($t = 2.186$, d.f. = 60, significant at 0.05 level). Significant differences between the two groups were also found in the self injurious behavior domain where the neuroleptic exposed group significantly showed higher scores ($t = 2.1$, d.f. = 60, significant at 0.05 level). As regards the domains of emotional disorder and non compliance, no significant differences emerged between the neuroleptic exposed and non neuroleptic exposed groups.

Follow Up Phase

In the follow up phase three female patients of the non neuroleptic exposed group died making the total number of patients fifty nine. Two male patients showed an increase in the dose of their neuroleptic medication, one by 25% and the other by 400%. The cause of increase in the two patients was hyperkinetic behavior. Neuroleptics in the form of thioridazine in a dose of 150 mg were newly administered to a female patient suffering from unspecified disturbing behavior. Accordingly the prevalence of neuroleptic exposure in the follow up phase has risen to 20.3%. Also since an antidepressant (amitryptiline) in a dose of 50 mg / day was newly administered in a patient for some unspecified reason the total current psychotropic prevalence in the follow up period became 23.7%.

As regards the SIB scores the significant differences in the self injurious behavior domain and acting out domain persisted between the neuroleptic and non neuroleptic exposed groups. (For self injurious domain $t = 2.7$, d.f. = 57 significant at 0.01 level, and for acting out domain $t = 2.1$, d.f. = 57 significant at 0.05 level).

No significant differences were found as regards the emotional and non compliance domains.

Discussion

For the sample under study psychotropic drug use ranged from 19.3% to 23.7% over a ten month period which is lower than Lipman's (1970) value of 5% and Stone et al's (1989) value of 35.4%. The fact that neuroleptics consisted the main or "heavy artillery" (Aman, 1985) of psychotropic drug use in accordance with other studies (Lipman, 1970) yet their prevalence (ranging from 17.7% to 20.3%) was still lower than Lipman's (1970) 39.2% and Stone et al's (1989) 26.8%. Also minor tranquilizers constituted only 1.6% of the psychotropic drug use which is lower than the 5 to 10% reported by Aman in 1985 and the 8.1% reported by Hill et al in 1985. Also antidepressants were given in the range of 0 to 1.69% which is comparable to Lipman's (1970) 3.8%.

As regards the lower use of neuroleptics in our study, it could be attributed to the criteria of admission which excluded aggressive patients, and to the relatively young age of the sample which according to some studies e.g. (Hill et al 1985) was found to lessen the likelihood of psychotropic medication (yet other studies such as Stone et al (1989) and Tu and Smith (1979) failed to find such an association). However, since variations in psychotropic use between institutions are very great (Stone et al 1989), the exact implications of our prevalence rates cannot be grasped except after comparing them with prevalence rates found in other national institutions to determine whether they are comparable or show the same wide variability reported abroad.

Two factors differed significantly between the neuroleptic exposed and non neuroleptic exposed groups. These were IQ and physical handicap. Interestingly,

these same factors were reported abroad to have significant associations with psychotropic drug use. Stone et al (1989), found that cerebral palsy and epilepsy were negatively associated with psychotropic drug use and they suggested that the operant factor in such an association was mobility of the patient. Such a suggestion is in accordance with our findings were the more physically handicapped (thus less likely to have normal mobility) and those with lower IQ (who are more likely to be physically handicapped and consequently less mobile) were found to be less prone to receive neuroleptics. Another explanation for decreased use of neuroleptics in the more handicapped individuals is that they may stir feelings of empathy in the care givers to a bigger extent than their more healthy counterparts. A similar observation was reported by Eaton and Menolaschino (1982) who noted that severely retarded subjects living in the community were more readily accepted by their parents and peers than the moderately retarded who tended to alienate others by their attention seeking and disruptive behaviors. Accordingly such latter behaviors when manifested in an institution where drugs are an important method of controlling behavior, we can assume that patients of higher IQ and bigger range of mobility would be more at risk to receive psychotropic medication.

Concerning type and dose of neuroleptics, we can see that monopharmacy was the rule with thioridazine as the most frequent drug used followed by haloperidol. This finding is in accordance with other studies which show that thioridazine is the most frequent drug used in this population (Aman, 1987). Also, since polypharmacy is potentially dangerous and generally no more effective than a properly selected single regimen (Tu and Smith, 1979), it seems appropriate to praise such a finding in this

study. Also, as regards dosage of neuroleptics it was comparable to dosages found elsewhere in similar age groups (116.8 mg / day in our study and 127.9 mg/day in Gualtieri et al's (1984) study).

As regards the indications for which the patients were given neuroleptic medication we can see that hyperactivity and aggressive behavior accounted for 65% of the causes of administration. This is in accordance with other studies in which acting out behaviors were found to be the main target for neuroleptic administration (Aman, 1987). By acting out behaviors we mean aggressiveness and hyperactivity, self injurious behavior, excitability, screaming and anxiety.

Interestingly, although self injurious behavior was more prominent in the neuroleptic exposed group yet it was not reported as a complaint necessitating psychotropic drug use. Stone et al (1989) noticed a similar finding where isolated self injurious behavior was considerably less associated with antipsychotic drug use than was isolated aggression.

Given the fact that many patients in this study were in the age of puberty, it was interesting to find only one case of masturbation for which neuroleptics were administered. The most likely explanation for such a finding is that although other patients probably masturbated also, yet their act was less striking and probably more discrete than the subject under question.

As regards the SIB questionnaire, we can see that acting out and self injurious behaviors were significantly increased in the neuroleptic exposed group in both the initial and follow up phases of the study. This is in accordance with observations made by other authors such as Aman (1985) who comments on the relative imperviousness of the above mentioned behaviors to psychotropic medic-

tion as follows" Contrary to what many people think, drug effects are typically modest, often subtle and difficult to detect. "It should be reminded also that although the latter behaviors could be part of a post neuroleptic behavioral syndrome (Gualtieri et al 1984), this latter behaviors could be part of a post neuroleptic behavioral syndrome (Gualtieri et al 1984), this possibility is far fetched at least as regards acting out behaviors which as mentioned before were present as main complaints before neuroleptic administration. Concerning self injurious behavior which was not present as a main complaint it could be argued that it was precipitated or at least aggravated by the use of psychotropic medication. However, to prove or disapprove this last point needs a follow up study in initially drug free patients.

Lastly, as regards the ethical issue of psychotropic use in the mentally retarded, it should be reminded that many of the behaviors for which psychotropic medication is administered such as aggression are not approved by the Food and Drug Administration in the States as long term indications for psychotropic drug use. According to Hill, et al, (1985), psychotropic medication should be given only in well defined mental disorders. However, since psychiatric diagnosis in the mentally retarded is sometimes very difficult especially in the severe and profound categories, there is presently no clear solution to this problem apart from devising new tests for use in the latter categories (e.g. Matson et al's 1991 DASH scale) or replacing neuroleptics by newer antiaggression drugs with less drastic side effects such as lithium and carbamazepine (Gualtieri, 1991).

In conclusion, this study has addressed a rather neglected topic which we as psychiatrists of the third world find some difficulty to attend to due to lack of

specialization and case overload (Nikapota, 1991). It is hoped that it has highlighted some of the important issues which are part of our day to day practice as well as raising some ethical dilemmas which are intended to be crucial questions for this work to be scholarly (Mouchka, 1985).

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Sujets Psychopharmacologiques Concernant les Jeunes Personnes Mentalement

Durant 10 mois 62 retardéess jeunes patients institués et mentalement retardés on été étudiés pour leurs médicaments psychotropics, prospectivement et transversement. La prévalance de l'usage des médicaments psychotropics varie entre 19.3% et 23.7% pendant la periode de l'étude. Les résultats sur le questionnaire "Self-Injurious Behaviour" ont démontré que les patients qui ont été exposés aux neuroleptics démontrent un comportement qui leur fait mal plus qui n'ont pas été exposés.

بعض الجوانب النفسية والدوائية لدى المتخلفين عقليا

يتعرض هذا البحث لمشكلة إستعمال العقاقير النفسية فى المتخلفين عقليا، وتتناول الدراسة مجموعة من المتخلفين فى إحدى دور رعاية المعوقين (العدد الكلى للعينية ٦٢)، من صفار السن، وذلك بتتبع نسبة إنتشار إستعمال العقاقير النفسية على مدى عشرة شهور، حيث تراوحت النسبة من ١٩,٣٪ إلى ٢٣,٧٪ خلال مدة البحث. أيضا أثبتت الدراسة إن نسبة الإيذاء الذاتى تزيد بنسبة ملحوظة فى العينة التى تعرضت لهذه العقاقير عن العينة الضابطة، وأن مستوى الذكاء ونسبة الإعاقة تختلف إختلاف ذو دلالة إحصائية بين المجموعتين. تتعرض الدراسة أيضا لبعض المشاكل الأخلاقية المرتبطة بإستعمال العقاقير فى المتخلفين عقليا.