

Prevalence of Tardive Dyskinesia in a Group of Young Institutionalized Retarded Subjects

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Tardive Dyskinesia (TD) was assessed in a group of young institutionalized mentally retarded subjects exposed to neuroleptics by using the AIMS scale. The prevalence of drug emergent dyskinesia was 10% in the initial part of the study and remained so during follow up although at a lesser severity. One patient (5%) with previous exposure to neuroleptics developed TD during follow up while being maintained on minor tranquilizers. The results of the study are discussed within our therapeutic experience with psychotropic drugs in institutionalized retarded subjects.

(Egypt.J. Psychiat.,1995,18: 109- 114).

Introduction

The first report of tardive dyskinesia (TD) in mentally retarded people treated with long term neuroleptics was published in 1975 by Paulson et al, (1975). This was about 20 years after the disorder was first described by European psychiatrists (Schonecher, 1975; Uhrbrand and Faurbye, 1960), but it was contemporary with the development of serious concern about TD among American psychiatrists (Gualtieri, 1991). Since then, the problem of TD has become a major issue for physicians who treat chronic patients, for administrators and makers of public policy, and for researchers in psychopharmacology (Gualtieri, 1991). The development of an antipsychotic drug that does not cause TD became a prime area of concern and efforts have

culminated in the development of a new class of antipsychotic drugs with substantially less extrapyramidal side effects (Hollister et al, 1990). Also, recognition of TD as a serious problem has contributed in making the practice of neuroleptic prescription in the chronic mentally handicapped more restricted than before (Stone et al, 1988).

However the phenomenon of TD remains a complex issue and prevalence rates of TD have varied widely in the past probably due to idiosyncrasies in measurement and definition (Gualtieri, 1991).

The aim of the present study is to assess the prevalence of TD in a group of institutionalized young mentally retarded subjects using a refined methodology which takes into consideration normal basal dyskinetic movements and to compare the estimates with figures from abroad to gain a deeper insight in the problem of TD in our culture.

Subjects and Method

The study pool consisted of 62 child and adolescents (ranging from 4 to 18 years of age) present in an institution for the severely mentally retarded in AL

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HASSA area in the Eastern district of Saudi Arabia. This institution is the only one in the area and contains facilities for 200 patients. As regards the assessment of TD, patients at risk for the disorder were considered separately as our target group while the remaining patients were taken as a control group. The former group consisted of patients who were either on current neuroleptic medication ($n=11$) or who were previously exposed to neuroleptics ($n=9$). (The latter or control group consisted of the remaining 42 patients who had neither history nor current exposure to neuroleptics.

The methodology included a two step procedure where first a mean average score of baseline involuntary movements was deduced by applying the Scale for Abnormal Involuntary Movements (AIMS) (Guy, 1976) on the drug free control group. Then in the second step the same scale was applied once more on cases in the target group which were diagnosed clinically as having TD. In normal circumstances (i.e. not in mental retardation) TD is diagnosed directly in target groups according to certain criteria such as the research criteria of TD proposed by Schooler and Kane (1982). In case of special populations such as mentally handicapped individuals who are given to a wide range of involuntary movements (Gualtieri, 1991) to abolish the effect of these movements, otherwise the rate of TD will be very much inflated. This methodological consideration was first suggested and applied by Kalachnik et al 1984 who arrived at their TD prevalence rate by subtracting the basal rate of dyskinesia in drug free controls. Accordingly in our study TD was diagnosed only in the patients in the target group who fulfilled the threshold scores for TD included in the research criteria of Schooler and Kane (1982) after subtraction of the basal dyskinetic score obtained from step one.

Male patients were assessed by the principal investigator (M.B.) and the doctor in charge of the male section (O.K.) while the female patients were assessed also by (M.B.) in collaboration with (Z.P.) who was in charge of the female section. Inter-rater reliability was within acceptable limits. A follow up phase consisted of applying the AIMS once more to the target group ten months after the initial assessment to detect changes in TD.

Results

The mean age of the whole sample was 13.45 years, duration of institutionalization was 4.3 years and the number of males was 23 and females 39. There were no statistically significant differences as regards age, male female ratio or duration of institutionalization between the group at risk for TD and the control group. However there was a statistically significant difference between the two groups as regards percentage of physical handicap where the former contained 35% and the latter 78.5% ($P<0.01$).

In the initial part of the study the twenty patients considered at risk for TD only 2 (10%) patients received a diagnosis of TD. Both were male patients, were on current neuroleptic medication, and scored well above the needed threshold score for diagnosis of TD. One of the patients showed marked masticatory and frowning movements, while the other did not show a certain predilection for a certain body area (had both grimacing and choreiform movements). No statistical difference was found between these two patients and the remaining nine patients who were on current neuroleptic medication but with no TD as regards mean dose or duration of neuroleptic medication. Also no changes of statistical significance were found as regards age. Table (1) shows a

comparison between the two patients with TD and the remaining nine patients as regards some of the variables connected with neuroleptic administration. Comparing the results of the AIMS between the patients in the neuroleptic exposed group who were also receiving antiepileptic treatment ($n=12$) and those in the same group but not receiving antiepileptics ($n=8$), the former group scored significantly lower ($t=2.25$, d.f. = 18, $P<0.05$). Antiepileptics used included phenobarbitone, carbamazepine, valproic acid, phenytoin and clonazepam.

In the follow up phase of the study one (5%) patient newly developed TD, while the former two who had TD in the initial part of the study remained so (i.e. with persistent TD) although at a lesser severity. This makes the total prevalence of TD in the follow up phase 15%. The patient who newly developed TD was a female aged 14 years with I.Q. = 20. She was not on current neuroleptic therapy but was maintained on diazepam 4 mg/daily since a period of four years. She was withdrawn from neuroleptics at least two years before the study began. Her dyskinetic movements were mainly localized in the bucco-oral area. As regards the other two patients with persistent TD, one had an increase in his neuroleptic dose (from 50mg thioridazine/ daily to 200 mg of the same compound daily.) The other patient had no change in dosage.

Discussion

In a previous paper (El Batrawi, 1994) we showed that psychotropic medication was prescribed within the average international limits in the same sample of patients studied here, and we recommended some minor steps to improve

Table 1
Comparison between TD Patients and Patients on Current Neuroleptic Medication with no TD Regards dose and Duration of Exposure to Neuroleptic Durgs (Initial Part of The Study)

	T.D. Group (n= 2)	Non T.D. Group (n= 9)
Mean	1.36 mg	3 mg chlorprom. eq/ kg.
Dose	Chlorprom. eq. / kg.	($L=1.06$, d.f. $=9$, $P<0.05$)
Mean duration	1.9 years	2.7 years
of exposure	(± 1.5)	(± 1.7) ($P<0.05$)

more the art of psychotropic prescription in our mentally retarded population. As regards the present study we can see that the prevalence of TD in the population studies ranged from 10% to 15% over the study period. When comparing this rate to prevalence rates from abroad we can easily deduce that the TD rate in our study is more or less within the average rates reported from similar studies in the same age range (prevalence rates of TD abroad ranged from 7% in Gualtieri et al's 1984 study to 12% in Richardson et al's 1991 study). The latter rate is probably an underestimate since it included from the previous study confirm our notion that general psychiatrists of the third world (from which all psychiatrists in our study belonged to) who are preoccupied by many other duties and case overload (Nikapota, 1991) do handle the issue of psychotropic prescription in the field of oligophrenia quite wisely. They do not over prescribe psychotropic

medication and the rate of deleterious side effects such as TD is well within acceptable international levels. Since shortage of psychiatrists in the third world prohibits subspecialization to a big extent (Nikapota, 1991), increasing the awareness of psychiatrists in such special areas such as mental retardation by analyzing and comparing their practice with that from other countries is, in our view, an important way to overcome lack of subspecialization as it tends to improve the needed skills where they are deficient and to bolster self confidence where there is competence. Having bolstered our self confidence by reporting the rather reasonable level of TD found in our study we come to a lack of skill which is attributable in our view to the lack of application of simple scales to detect and monitor TD on a routine basis. As seen from the results one patient who had TD in the initial part of the study had his dose increased during follow up with subsequent partial masking of his TD. Routine application of simple scales (by doctors or nurses) to detect and monitor the course of TD such as the scale for Tardive Dyskinesia and Tardive Akathisia (TDAK), (Gualtieri, 1991) would have helped in the early detection of TD in this patient and thus would have offered other therapeutic alternatives such as shifting to other never and less toxic drugs such as carbamazepine or lithium (Gualtieri, 1991). The issue of neuroleptic masking is important in this context since it might be argued that it has lowered the rate of TD in our study. This seems to be a remote possibility due to the fact that neuroleptic masking in children tends to be lower than in adults (Richardson et al, 1991) and also due to the fact that two of the three patients who developed TD were on current neuroleptic medication while the third one

who was detected during follow up was receiving diazepam which although is considered by some to be a potential antidyskinetic agent (Jus et al, 1974) is yet alleged by others to aggravate TD (Rosenbaum and de la Fuente, 1979). However, it could be still argued that the TD rate in our study should have been well under rates reported from Western countries due to ethnic differences which are known to decrease the prevalence of TD in psychiatric patients from the non western communities (Okasha et al, 1986, El Defrawi, 1982 and Chiu et al, 1992). Since the sample size in our study is too small to make a general statement regarding this last point we suggest that a prospective transcultural study with big sample size can give a definitive answer to the effect of ethnicity on development of TD in mentally retarded subjects. The last point to be raised is the finding that antiepileptic use with neuroleptics was significantly associated with a decrease in dyskinetic movements than when neuroleptics were used alone. This finding is explained by Loscher 1991 on the basis that antiepileptics such as the ones used in our study sample (phenytoin, valproic acid and phenobarbitone but not carbamazepine) act through potentiation of GABA and thus act as potential antidyskinetic agents.

In conclusion, this study and its previous predecessor (EL Batrawi, 1994) have aimed to give an outline concerning some of the important practical issues related to the use and side effects of psychotropic therapy in institutions for the mentally retarded where we can be summoned to give our expertise knowledge to help both the clients and the staff in dealing with behavioural problems in which psychopharmacological issues play an important role.

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La prévalence de la dyskinésie tardive chez un groupe de jeunes patients débiles hospitalisés

Nous avons évalué la présence de dyskinésie tardive dans un groupe de jeunes déficients mentaux hospitalisés, recevant des neuroleptiques. La prevalence de dyskinésie tardive liée aux neuroleptiques était de 10% initialement et c'est maintenu durant le suivi avec moins de sévérité. Les résultats de l'étude sont présentés et discutés.

معدل إنتشار الحركات اللاإرادية المتأخرة

في المتخلفين عقلياً المقيمين بالمؤسسات

تم تقييم معدل إنتشار الحركات اللاإرادية المتأخرة باستخدام مقياس الحركات الغير طبيعية اللاإرادية، وقد وجد أن نسبة ١٠٪ من المفحوصين تعاني من هذا الاضطراب، وقد انخفضت هذه النسبة إلى ٥ ٪ في تقييم لاحق للمتابعة. ويناقش البحث النتائج والدلالات في ضوء استخدامات العقاقير الطبفسية في فئة المتخلفين عقلياً.