A Longitudinal Study on Day Hospital Adults Clients with Intellectual Disabilities and Psychiatric Disorders

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ABSTRACT

Background and objectives
Recent studies have shown a high proportion of psychiatric troubles disorders in the population with Intellectual Disability (ID). However, the literature demonstrates a lack of adapted psychiatric care for people with dual diagnosis. If When this kind of structure exists, it remains quite rare and misjudged. Offering an alternative to psychiatric hospitalisation, the UPDM's Day Hospital proposes to personsoffers people with ID and psychiatric troubles disorders a therapeutic place where they can benefit of from different therapies, individually or in group.

Methods
This paper shows the results of a study about the efficacy of this adapted care in Day Hospital. Twenty nine29 patients of the Day Hospital were evaluated with the "Aberrant Behaviour Checklist" (ABC) during over a 55 month perioda period of 55 months. The evolution of the patients in the Day Hospital programme was assessed by the observation of behavioural troubles.

Results
The results show the presence of improvement on over the period concerned by the study. Using a more careful evaluation of our population's assessment the evolution in our population, we noted a different trend based on the intellectual level. Thus, the participants with mild to moderate ID show a decrease of their behavioural problems while the participants with severe to profound ID show more stable results.

Conclusions
This study, based on clinical observations, suggests the actual incomplete adequacy of the Day Hospital Structure therapeutic approach in Day Hospital Structure: the treatments proposed in Day Hospital do not suit all clients in the same way the same to all the clients. The main part of the care are group therapies and are better adapted to fit well with a population of a better cognitive level populations possessing a higher cognitive level. People with severe to profound LD could benefit of ***individual care in groups****, to prepare themselves to live in the natural groups in within socio-educational residences or workshops*

Key words: Longitudinal Study - Day Hospital – Intellectual Disability – Psychiatric Disorders

INTRODUCTION

Recent studies show a high proportion of psychiatric disorders in the population with Intellectual Disability (ID). The literature demonstrates a lack of adapted psychiatric care for persons with dual diagnosis. Even if the notion that intellectual disability and psychiatric disorders were mutually exclusive (Poindexter 1989, Sovner *et al.* 1983) has largely disappeared, studies have underscored a high proportion of psychiatric disorders in the population with intellectual disabilities (Bouras and Holt 2001, Bouras and Szymanski 1997, Ballinger and Reid 1977, Eaton and Menolascino 1989, Koller *et al.* 1983, Lund 1985, Moss *et al.* ,1996). Certain studies state that 10%-80% of clients with intellectual disabilities present associated psychiatric disorders (Costello *et al.* 2001, Bouras 1999, Galli Carminati 2000, Galli Carminati and Méndez 2003). The literature on the subject reports practically no programs addressing these particular clients. Torrey (1993) reports the lack of psychiatrists specialized in dual diagnosis treatments for individuals. These observations emphasize that persons with intellectual disabilities present a great need for adequate psychiatric treatment.

The Department of Psychiatry of the University Hospitals of Geneva proposes a specific structure for this population: the "Psychiatric Unit for Intellectual Disabilities" (UPDM). Part of this structure, the UPDM's Day Hospital (DH) proposes a therapeutic place for individuals with ID and psychiatric disorders.

In DH group therapies aretherapies are usually accompanied by individual treatments, carried out by a pluri-disciplinary team (doctors, psychologists, nurses, educators, speech therapists, physiotherapists, and social workers). We also offer also a psychotropic treatments, Twenty to thirty different groups are proposed every week and can be divided into three categories: verbal groups, non-verbal groups, (e.g. snoezelen, swimming-pool, sport, …) and finally psycho-educational groups (e.g. cafeteria group, kitchen group, …).. These also present the advantage of being , and low cost due to the low therapist/client ratio (Galli Carminati *et al.* 2004, Galli Carminati 2000, Galli Carminati 2003, Schopler and Mesibov 1986, Peeters 1996,).

The aim of this study was to observe the evolution of behavioral disorders of DH.

METHOD

Sample

We selected all the clients signed up on the DH pool as of March 1st 2000 for a total of 29 clients, 21 men and 8 women. The age of the clients varies between 20 and 56 years of age with a mean of 35. Every member of the sample group presents intellectual disability diagnosis based on psychological evaluations using WAIS-R (Wechsler 1981) and for the lower levels, using ICD-10 (World Health Organization 1992) and DC-LD (The Royal College of Psychiatrists 2001) diagnostic evaluation criteria. Eight persons in our sample presents a « mild » ID (code ICD-10: F70), 10 a retardation referred to as « medium » (F71), 5 present « severe » ID (F72) 6 persons of the population haves a « profound » ID (F73).

As an inclusion criterion every client also exhibits at least a second psychiatric diagnosis, according to ICD-10. A majority of clients (45%, n= 13) present pervasive development disorders (PDD), some of them also associated with other diagnosis. The remaining 55% (n=16) distributes are distributed into among all the other psychiatric disorders (e.g. affective disorders, organic disorders, eating disorders,…). Clients have to obtain a minimum of 2 evaluations to be included in the study.

More than 85% of the clients are under tutelary authority. We excluded the clients without any consent.

The amount of time spent at the DH varies drastically from client to client going from half a day (for one client) to 5 days a week (for nine clients out 29).

Concerning the type of care, the individual therapies vary according to the clients' needs: there are between 1.5 and 36 individual sessions with therapists per month. The type of group therapies varies as well: 16 clients out of 20 participate to in verbal groups at an average of two groups a week (a minimum of 1 verbal group a week, and a maximum of 5). 23Twenty three clients out of 29

participate in non-verbal groups (minimum of 1 non verbal group a week, and a maximum of 8). Finally, twenty five clients out of 29 attend psycho-educational groups.

The majority of the participants live in institutions; only eight out of 29 live in their house or in the family house. All clients attended the DH for varying time lengths, with varying frequency. All these clients have a personalized program at the DH.

Procedure

The ethics commission of the University Hospitals of Geneva approved this study. An explanation and clear oral information were given to the patient a week before the study. The clients were personally informed during individual sessions with two DH psychologists.

Eighteen data samples were retrieved at approximately two-month intervals, between March 2000 and October 2004 (55 months). All the caregivers observed the clients during one week. At the end of this week, the two DH psychologists filled in the ABC, based on the observations of the whole caregivers' team.

We chose the ABC, adapted to clients from mild to profound intellectual disabilities, to evaluate the behavioral disorders. The ABC has the advantage of having an handable mangeable number of items in conjunction with a clearly established and validated factorial structure (Aman *et al.* 1985a, Aman *et al.* 1985b, Marshburn and Aman 1992). The 58 items are graded on a 3 point scale (0: the behavior is not at all a problem, 3: it is a very important problem) and can be grouped into five factors :factors: F1- Irritability, Agitation, Crying (15 items), F2- Lethargy, social withdrawal (16 items), F3- Stereotypic Behavior (7 items), F4- Hyperactivity, Non-compliance (16 items), F5- Inappropriate Speech (4 items). Frequency of behavioral episodes is also recorded. The knowledge gained on the subject of the ABC has also been expanded thanks to another analysis of results which taking takes diverse factors such as age and sex into consideration (Aman *et al.* 1995, Aman *et al.* 1987b). Note that the greater is the score on the ABC, the worse are the behaviors.

Due to the characteristics of our data (small sample, non-normality of data, ordinal variables), we used non-parametric statistic tests. To see the evolution over time, the Friedman analysis was computed as a repeated measures analysis for each factor. To compare different times in pairs and observe more precisely the evolution of the client's behaviors between the beginning and the end of the study, we used the Wilcoxon Signed Rank Test.

RESULTS

Over the observation period, we obtained a total of 18 data collections. The number of clients varied depending on vacations or discharges from the DH. In order to compare all factors, we have divided the sum of each factor by the number of items in each factor. To respect the ordinal characteristics of data, we used the median score to resume the information for the group over the period of study (Figure 1). We can see that F2 (lethargy/social withdrawal) is the most important problem and that F1 (irritability/agitation) is less important for our sample. The Friedman Test's results indicate that a change over time occurs and according to graph 1, the group presents significant differences in factors F1 (X^2 (8,17)=64.58; p=.00), F2 (X^2 (8,17)=49.72; p=.00), F3 (X^2 (8,17)=61.19; p=.00) and F4 (X^2 (8,17)=60.24; p=.00) and no difference for factor F5. The Wilcoxon Signed Rank Test indicates a decrease between the first and the last data collection of factors F1 (Z(16)=3.47; p=.00), F3 (Z(16)=1.99; p=.05), F4 (Z(16)=3.33; p=.00), F5 (Z(16)=2.14; p=.03) (Table 1).

In order to determine the intellectual disability incidence on these results, as has already been done in the studies of Aman *et al.* (1995, 1987a), we separated our sample into two groups. The first group consisted in of clients presenting mild and medium intellectual disabilities (MID group, n= 18). The second grouped clients presenting severe and profound intellectual disabilities (PID group, n= 11).

To see if they differentiate, we carried out a Wilcoxon-Mann-Whitney Test analysis for each factor at each time point (Figure 2, 3, 4, 5, 6). Differences can be observed on factors F1 through F4 (PID>MID). However, except for factor F4, the stable differentiation between the two groups takes place at a later stage. The final tendency observed points to an overall decrease for both groups. There

is no statistical difference at the last data collection (T18). The results of the PID group indicate a global decrease for all factors. Concerning factor F5 (inappropriate language), the two groups are significantly different only on the first and second data collections, but with inverse tendencies (MID>PID).

Repeated measurement analysis, done with the Friedman Test confirms differences depending on ID level. The MID group presents significant differences along time in factors F1, F2, F3 and F4 (F1: X^2 (4, 17)=) =31.19, p=.02; F2: X^2 (4, 17)=31.91, p=.02; F3: X^2 (4, 17)=31.49; p=.02; F4: X^2 (4, 17)=36.31; p=.01), but none in factor F5. The PID group presents statistical differences only for factors F1, F3 and F4 (F1: X^2 (4, 17)=38.74, p=.00; F3: X^2 (4, 17)=39.60; p=.00; F4: X^2 (4, 17)=39.99; p=.00).

In order to determine the direction of change taking place, we compared the scores at the beginning of the study and at the end with the Wilcoxon Signed Rank Test for the two groups PID and MID separately (Table 1). For the MID group, the significant differences between the first and last data collection are present in factors F1, F4 and F5. For the PID group, significant differences are on F1 and F4. We can observe differences in evolution in the MID group, whilst the PID group remains quite stable all along the study except at the last data collection where we observe a significant decrease.

To see the influence of psychopharmacological treatments, we calculated the percentage of persons taking each class of treatments. The treatments are different comparing the MID and the PID groups. Antipsychotic treatments are more present in the MID clients and consequently the treatment against side effects (correctors), the hypnotic/ anxiolytic and antidepressant treatments are more present and the mood stabilizers less present in MID group at T1.

Psychopharmacological treatments in MID group show some changes between T1 and T18. Antipsychotic treatment and consequently the treatment against side effects are augmented in T18 with a relatively more important administration of classical anti-psychotics. On the contrary, the hypnotics/anxiolytics treatment is reduced in T18. Antidepressants are augmented and mood stabilizers decreased in T18 (Figure 7).

DISCUSSION

Our study depicts a global amelioration of the DH clients over the considered period. We noticed a lack of homogeneity in the ABC results according to intellectual disability level (Aman and *et al.* 1987a) and we separated our sample into a group with mild and moderate intellectual disabilities (MID), and another group with severe and profound intellectual disability (PID).. The results show that the two groups split globally on all the factors, except inappropriate speech (F5), starting at time 3. The differences progressed until T16 for all factors except F5. In the last two data collection, T17 and T18, the results of PID group decreased and joined the MID group.

McCracken *et al.* (2002) and Marshburn *et al.*'s (1992) studies on ABC identified a cut-off score of 18 points or more on irritability/agitation (F1) as an indicator of great severity for children. If we take a look at the result of our sample according to this cut-off score (18 points / 15 items in F1 = 1.2), we can see that the sample has a good evolution for both groups. The score of MID group is decreasing from 1.32 to 0.33 and the PID group from 1.25 to 0.80 which is beyond the cut-off score. These scores on Factor F1 indicate a favorable evolution of both groups with a rapid evolution for MID group and a less one for PID group.

Globally, it would seem that the Day Hospital has an influence on two components of behavioral disorders measured by ABC scale: agitation/irritability (F1) and hyperactivity/non-compliance (F4). Despite a clinical work and therapeutics groups, we do not noted an amelioration of lethargy/social withdrawal (F2) for MID, nor for PID group.

Concerning the different kind of therapies, the group approach seems to correspond better to a population mildly intellectually impaired. In spite of irregular tendencies, behavioral dimensions decrease statistically in MID more early than inearlier than in PID where they remain constant for a longer period of time preceding remain longer constant before a significant amelioration. The

behavioral differences between these two groups could be explained by the internal characteristics of the participants themselves and the lack of homogeneity in the groups. For instance, we can observe a greater number of Pervasive Developmental Disorders (PDD) in the PID group (9 clients out of 11 with PDD) than in the MID (5 clients out of 19 with PDD). The PDD participants could be more influenced by festivities and routines' interruptions of their routine. The PDD participants could also benefit less from a group approach and, therefore, obtain fewer improvements.

Concerning the psychotropic treatment, the T1 versus T18 differences in the PID group have the same trend than in the MID group concerning the antipsychotic and corrector treatment but with a very small augmentation in atypical anti-psychotics; the hypnotic/anxiolytic treatment as well as the antidepressants and mood stabilizers are augmented at T18. We can explain these differences with two observations. First, the clients in both groups considered in T18, are these those who need the longer care in DH due to more important difficulties to with respect to reintegratinge workshops, residences or families. Second, the MID groups are more disturbed by side effects such as weight gain, which is are a consequence of atypical antipsychotic treatment, and the treatment could be influenced by their demand.

The results of this study have to be viewed in light of the study's inherent methodological shortcomings. First note the small size of the sample and the great heterogeneity of the clients. Second our clients do not receive the same treatment, day programs being strictly individualized. TertioThird, we could also underline the lack of a control group in the study because due to of the otherwise unethical decision to leave some clients without DH treatment, creating with an important risk for of complete hospitalization (Galli Carminati *et al.* 2005a; Galli Carminati *et al.* 2005b).

We have to underline that the longitudinal design has the major advantage of observing the same participants in a long-term setting. This gives a large wide view of the behavioral variations that may occur along time in DH and a strong appreciation of their clinical evolution.

These results led us to the following reflection: clients with severe and profound intellectual disabilities need individual care or the presence of numerous caregivers in group activities during a long period (several years). It is impossible to eliminate group therapies since clients need to integrate or re-integrate the "natural" groups in homes or workshops. Individual treatment, on the other hand, although being absolutely necessary might create far too exclusive a relationship between the client and the caregiver thus hindering social development. It is probable that for a population with severe and profound intellectual disabilities DH group therapies are not sufficiently adapted to their cognitive level. Our hypothesis is that we should create "in group individual treatments", that means a group in which we have a greater client/therapist ratio, in order to bring a structured group dynamic (Galli Carminati *et al.* 2004).

CONCLUSION

The goal of this study was to evaluate the effects of different treatments in DH for clients with intellectual disabilities and associated psychiatric disorders. We targeted our observations on behavioral problems.

The results obtained gave an overall positive appreciation of the clinical state: a decrease of some behavioral disorders such as agitation and hyperactivity for MID whereas the PID group remains globally stable. This led us to think a specific treatment for persons with ID is very important but specifically when presenting severe-to-profound intellectual disabilities. These results allowed us to consider DH structural modifications by foreseeing different activities, and possibly the creation of therapeutic structures or approaches for different cognitive levels.

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FIGURE AND TABLE LEGENDS

Figure 1. ABC median's evolution over time on each factors of the whole sample F1=Irritability, Agitation F2=Lethargy, Social Withdrawal F3=Stereotypic Behaviors F4=Hyperactivity non-compliance F5=Inappropriate speech

Figure 2 : ABC median's evolution over time of factor F1 (irritability, agitation) and statistical differences between MID and PID groups.

Figure 3 : ABC median's evolution over time of factor F2 (lethargy, social withdrawal) and statistical differences between MID and PID groups.

Figure 4 : ABC median's evolution over time of factor F3 (stereotypic beahaviour) and statistical differences between MID and PID groups.

Figure 5 : ABC median's evolution over time of factor F4 (hyperactivity, non-compliance) and statistical differences between MID and PID groups.

Figure 6 : ABC median's evolution over time of factor F5 (inappropriate speech) and statistical differences between MID and PID groups.

Figure 7 : comparison of psychotropic treatments between beginning and end of study for MID and PID groups.

Table 1 Wilcoxon signed rank test, comparing first and last data collection (T1-T18)

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Figure and Tables

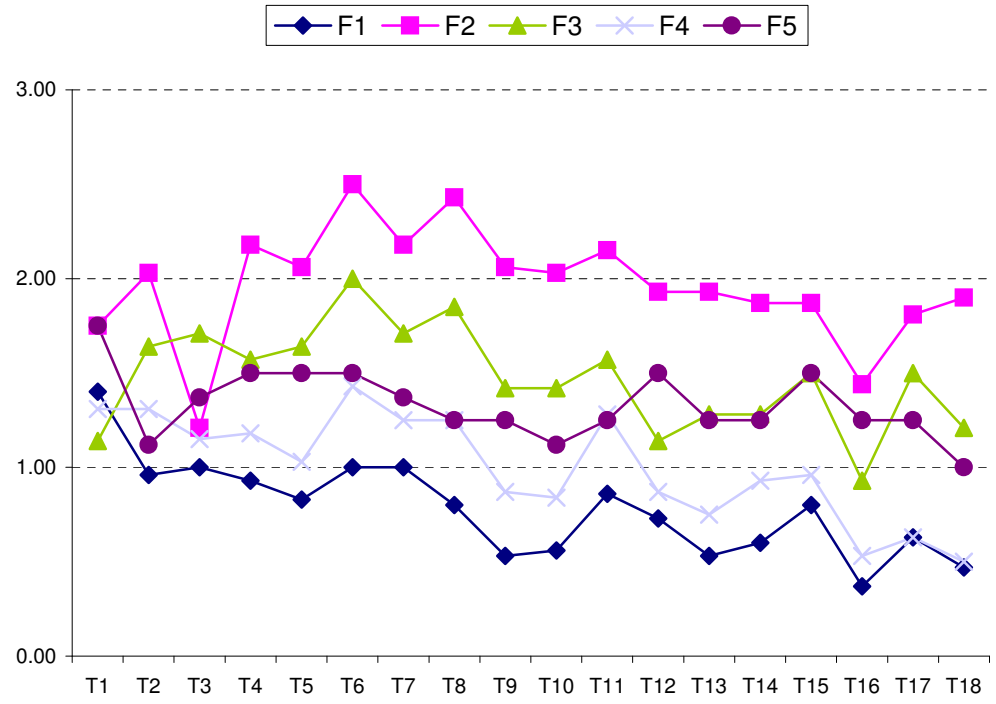
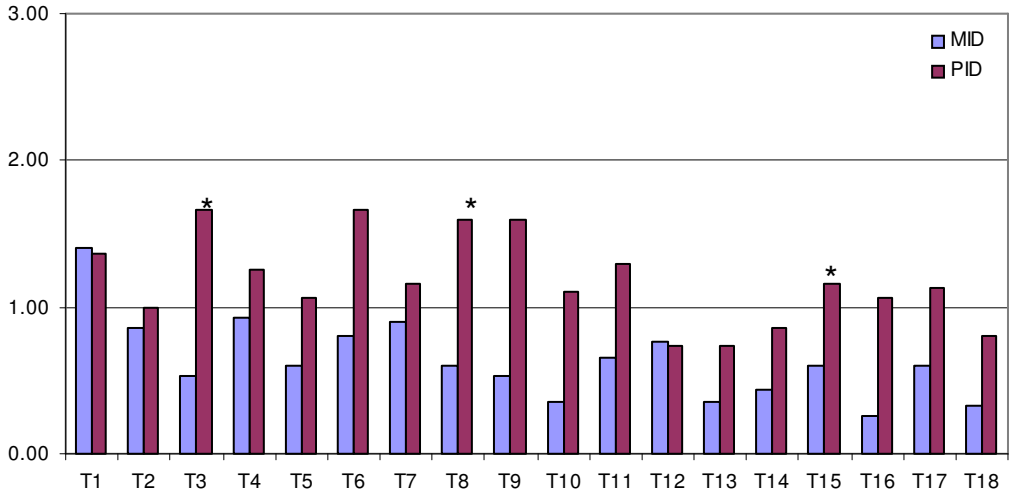


Figure 1. ABC median's evolution over time on each factors of the whole sample F1=Irritability, Agitation F2=Lethargy, Social Withdrawal F3=Stereotypic Behaviors F4=Hyperactivity non-compliance F5=Inappropriate speech



Note: ** $p \leq .01$; * $p \leq .05$ (Wilcoxon Mann-Whitney Test, two-way)

Figure 2 : ABC median's evolution over time of factor F1 (irritability, agitation) and statistical differences between MID and PID groups.

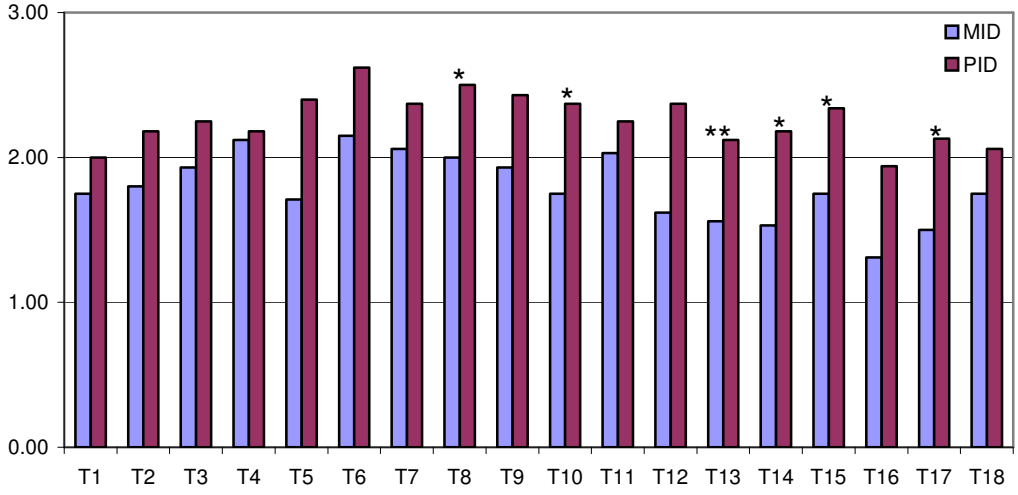


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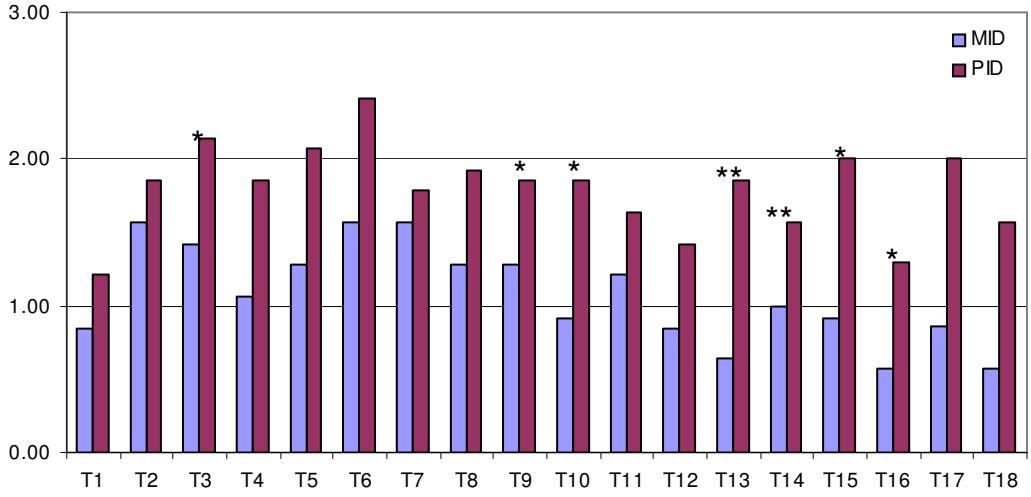
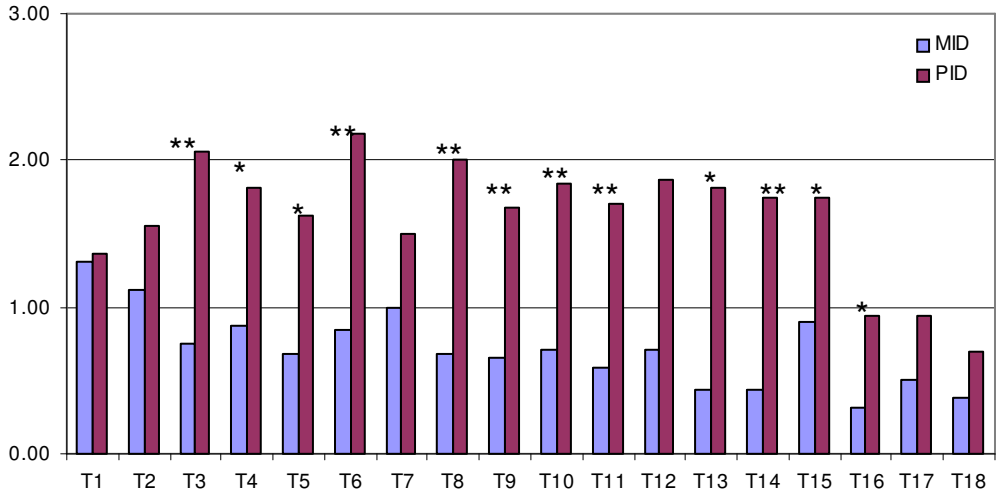
Figure 3 : ABC median's evolution over time of factor F2 (lethargy, social withdrawal) and statistical differences between MID and PID groups.



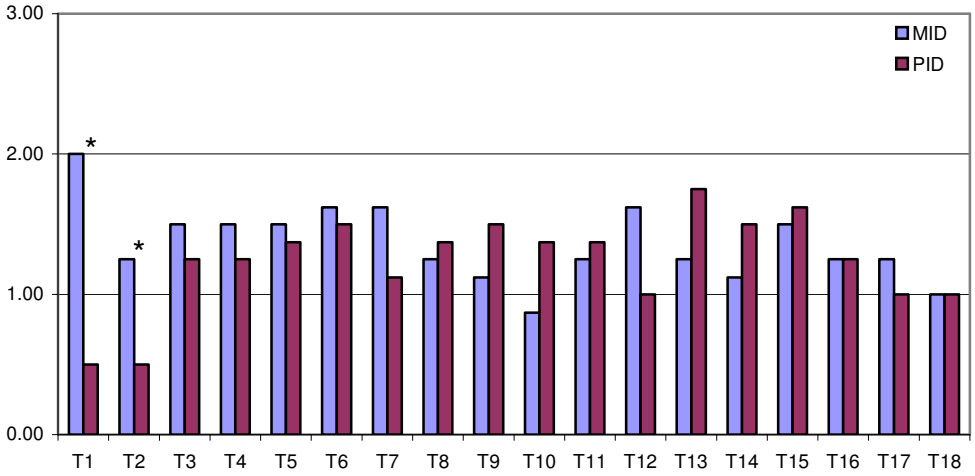
Note: ** $p \leq .01$; * $p \leq .05$ (Wilcoxon Mann-Whitney Test, two-way)

Figure 4 : ABC median's evolution over time of factor F3 (stereotypic beahaviour) and statistical differences between MID and PID groups.



Note: ** $p \leq .01$; * $p \leq .05$ (Wilcoxon Mann-Whitney Test, two-way)

Figure 5 : ABC median's evolution over time of factor F4 (hyperactivity, non-compliance) and statistical differences between MID and PID groups.



Note: ** $p \leq .01$; * $p \leq .05$ (Wilcoxon Mann-Whitney Test, two-way)

Figure 6 : ABC median's evolution over time of factor F5 (inappropriate speech) and statistical differences between MID and PID groups.

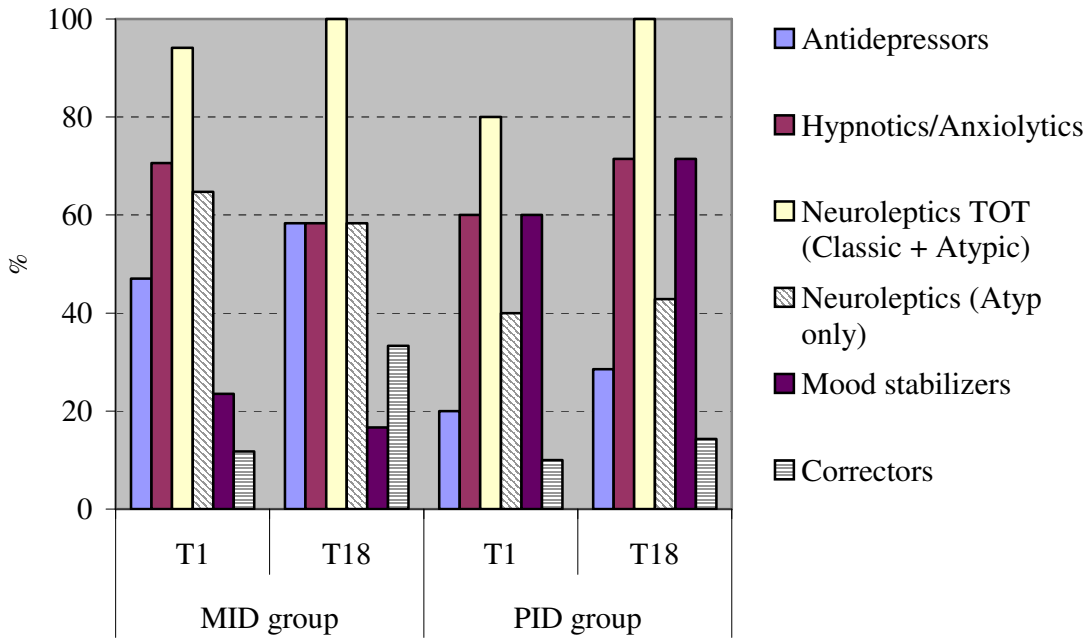


Figure 7 : comparison of psychotropic treatments between beginning and end of study for MID and PID groups.

Table 1 Wilcoxon signed rank test, comparing first and last data collection (T1-T18)

Factors	**Total Group**	**MID**	**PID**
F1 (Irritability, Agitation)	Z= 3.47 **	Z= 2.81*	Z= 1.99 *
F2 (Lethargy, Social Withdrawal)	-	-	-
F3 (Stereotypic Behaviors)	Z= 1.99 *	-	-
F4 (Hyperactivity non-compliance)	Z= 3.33 **	Z= 2.68*	Z= 1.99 *
F5 (Inappropriate speech)	Z= 2.14 *	Z= 2.41*	-

Note: ** $p \leq .01$; * $p \leq .05$; - = no significant difference T1-T18

F1=Irritability, Agitation F2=Lethargy, Social Withdrawal F3=Stereotypic Behaviors F4=Hyperactivity non-compliance F5=Inappropriate speech