Psychiatric hospitalization at home unit in Spain: clinical and functional outcomes after three years of experience

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Dear Editor,

Hospital at home for psychiatric patients is a new emerging resource of delivering acute mental health care in the community. The main objective of this program is to provide intense care to patients with severe mental disorders at home as an alternative to acute admission[1,2].

During the last years an increasing number of community care models have been developed worldwide[3–7]. The *Crisis Resolution and Home Treatment Teams* (CRT) were implemented nationally in England from the 2000[8] being the most studied mobile teams' model. A quite robust evidence has supported the effectiveness of CRT model[1,9–11]. Quasi-experimental research found a sensible reduction in hospitalization rates following CRT and fewer days in hospitalization[6,12–14]. Clinical and social outcomes have shown similar satisfying results[7,11,15]. Nevertheless, there is also evidence that model implementation and outcomes vary considerably among different teams[12,16]. As a consequence, there are methodological limitations, such as different target populations and heterogeneity in study designs, that complicate the interpretation of the findings[13,17]. The development of programs based on CRT model in Spain has been carried out recently, so we have little data about their effectiveness[7].

The aim of this study is to evaluate the effectiveness regarding functionality, psychiatric symptoms improvement and readmission rate in patients attended at the Psychiatric Home Hospitalization Unit of the Hospital del Mar (HADMar).

Methods

Socio-demographic and clinical data were collected retrospectively at admission and discharge of all patients treated at HADMar between January 2015 and December 2018. Severity of disease and patient's level of functionality was evaluated with the Clinical Global Impression Scale (CGI) and the global assessment of functioning scale (GAF). Psychotic symptoms were assessed with the Positive and Negative Syndrome Scale (PANSS), manic symptoms with the Young Mania Rating Scale (YMRS) and depressive symptoms with the Hamilton Depression Rating Scale (HDRS). Suicidal behavior was evaluated at admission with the suicide item on the HDRS to all patients. During the follow-up all suicidal ideation with risk of suicide attempt and all suicide attempts were recorded. All readmissions in the acute psychiatric unit or in HADMar were recorded within ninety days after discharge.

Results

Three hundred and four patients were included in the study. Socio-demographic and clinical characteristics of the sample are shown in table 1.

GAF scale was assessed in all patients, finding an improvement of 16.91 points at discharge from HADMar (p=0.000). The CGI scale was administered to all 304 patients. Regarding the severity of symptoms mean CGI severity item (CGI-S) at admission was 4.59 (corresponding to moderately-markedly ill) and there was an improvement at the time of discharge according to the CGI improvement item (mean CGI-I=2.30, corresponding to much improved). In the subgroup of patients with psychotic disorders PANSS scale score was obtained in 125 patients, and we found a statistically significant reduction of 20.08 points in the PANSS total scores from admission to discharge (p=0.000). The HDRS scale was assessed in 67 patients with depressive symptoms (in 43 patients with major depressive disorder and in 24 patients with bipolar disorder), finding a significant decrease of 12.82 points in the scale scores from admission to discharge (p=0.000). The YMRS scale was administered to 34 attended due to manic symptoms, finding a statistically significant reduction of 11.88 points between admission and the moment of discharge (p=0.000) (table 2).

Suicide behavior was assessed in all 304 patients at the time of admission with the suicide item on the HDRS scale, being the mean score 0.46 (SD 0.67). During the follow up 8 cases of suicidal ideation with risk of attempt at suicide were recorded (2.6% of the sample). Five patients performed a suicide attempt (1.7% of the sample), and there were no cases of consummated suicide (table 3).

Table 1 Socio-demographic and clinical characteristics of the sample

Age, mean (SD)	45.13 (16.92)
Gender, n (%)	
Women	162 (53.3)
Male	142 (46.7)
Employment status, n (%)	
Student	6 (2.0)
Unemployed	105 (34.5)
Employed	120 (39.5)
Pensioner	47 (15.5)
Laboral status, n (%)	
Estudiante	13 (4.3)
Desempleado	91 (29.8)
Activo Laboralmente	86 (28.3)
Pensionista	114 (37.6)
Main diagnostic, n (%)	
Psychotic disorders	140 (46.1)
Major depressive disorder	43 (14.1)
Bipolar disorder	76 (25.0)
Anxiety disorders	7 (2.3)
Personality disorders	16 (5.3)
Other psychiatric disorders	22 (7.2)
Comorbid drug abuse, n (%)	
No comorbid drug use	168 (54.55)
Alcohol	29 (9.42)
Cannabis	52 (16.88)
Cocaine	6 (1.95)
Other psychostimulant drugs	4 (1.30)
Opiates	1 (0.32)
Other drugs	7 (2.27)
Days of follow up, mean (SD)	28.12 (18.31)

Table 3 Suicide behavior

Ítem de suicidio de la escala HDRS al ingreso, n (%)	
0. Absent	190 (62.5)
1. Feels life is not worth living	92 (30.3)
2. Wishes he/she were dead or any thoughts of possible death to self.	17 (5.6)
3. Ideas or gestures of suicide	5 (1.6)
4. Attempts at suicide	0 (0)
Suicidal ideation with risk of autolytic attempt at suicide during follow up n (%)	
No	296 (97.4)
Yes	8 (2.6)
Suicide attempts during follow up, n (%)	
No	299 (98.3)
Yes	5 (1.7)

We reviewed the medical records of the 304 patients after discharge from HADMar for the following ninety days. In this period of time 65 patients (21.4% of the sample) were re-admitted; 55 of them (18.1% of the sample) were admitted to psychiatric inpatient acute care unit and 10 were admitted to the HADMar (3.3% of the sample). Bivariate analysis was performed to investigate risk factors for readmission. Higher score in CGI-S, suicide item on the HDRS and in YMRS at admission and lower score in GAF at admission show an increased risk for ninety-days readmission, statistically significant.

Conclusion

This study provides relevant data regarding the improvement in symptomatology and functionality in patients with severe mental disorders during an acute episode. HADMar seems to be a viable way of treating people with serious mental illnesses and an effective alternative to inpatient admission. Nevertheless, further studies are still needed to evaluate the impacts in terms of clinical outcomes, economic issues, patients and relative's satisfaction and burden experienced by relatives during the follow up.

Table 2 Values of the outcome variables at admission (t0) and discharge (t1) and unadjusted changes (t0–t1)

	T0 Mean (SD)	T1 Mean (SD)	N	Change t0-t1 (95% CI)	p
CGI	4.59 (1.12)	2.30 (1.48)	304	NA	NA
GAF	46.16 (15.17)	63.07 (18.16)	304	-16.90 (-18.85 a -14.95)	0.000
PANSS	83.49 (21.68)	63.40 (23.32)	125	20.08 (15.98 a 24.18)	0.000
YMRS	18.50 (10.82)	6.61 (10.03)	34	11.88 (6.97 a 16.79)	0.000
HDRS	21.20 (10.55)	8.38 (9.56)	67	12.82 (9.88 a 15.76)	0.000

SD: standard deviation; NA: Not applicable

CONFLICT OF INTERESTS

No conflict of interest regarding this study

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Mixed etiology catatonia

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Dear Editor,

Catatonia is a difficult diagnosis syndrome. It consists of symptoms from different spheres: psychomotor, behavioral, cognitive, affective and dysautonomic[1,2].

Although catatonia has long been associated with a purely psychiatric origin, primarily to decompensations of affective disorders, today it is known that the picture may have an organic origin. More than 100 possible medical conditions involved in its appearance have been identified[3].

As many authors point out, it is essential to carry out a complete organic assessment of the catatonic patient, even in the presence of a history of a psychiatric disorder, since it is very common for catatonia to have a multiple and multifactorial etiology[4].

The following is a case of a 54-year-old male with suspected catatonic syndrome, in which a probable multifactorial origin was identified.

The patient is transferred to the hospital for psychiatric evaluation due to the presence of strange behavior and deterioration of the general condition. The referral report states that it has been found in an abandoned caravan and in unsanitary conditions. It is not possible to obtain direct

information from the patient through conversation due to his state of mutism. The patient is conscious, and his appearance is cachectic and dirty. He remains throughout the interview with his eyes open, with little flicker, mutist and immobile, without objectifying muscle stiffness.

The neurological examination shows a vertical nystagmus and generalized myoclonus, suggestive along with the cachexia of Wernicke's encephalopathy.

In the rest of the physical examination, the presence of a bruise in the abdominal wall that reaches both thighs stands out.

At an analytical level, a moderate hyponatremia (124 mE /l), a moderate hypokalemia (2.7 mEq/l) and an increase in CRP (8.9) can be seen.

In summary, in the initial assessment in the context of the Emergency Department, the presence of moderate hyponatremia and hypokalaemia is proposed as organic diagnoses, added to a possible Wernicke encephalopathy, concurrently with a motor picture that suggests catatonia.

The Bush-Francis Catatonia Screening Instrument (BFCSI) is administered, reaching a score of 7/14, confirming the clinical suspicion of catatonia. A provocation test is then performed with 2mg of oral lorazepam. Using the Bush-Francis Catatonia Rating Scale (BFCRS), considered the gold standard in this pharmacological test[5], the score on this scale is reduced from 10 to 6 points. That variation is considered a partial improvement. The picture is cataloged as a mixed catatonia to be filmed, with stuporous and agitated subtype data, with no suspicion of malignant catatonia.

The patient is admitted with Internal Medicine to continue the diagnostic evaluation and treatment. He receives 2mg of lorazepam every 8 hours for the catatonic condition and 300mg of intravenous thiamine every 8 hours plus 500mg a day of vitamin complex B1, B6, B12 to treat possible Wernicke encephalopathy.

While the patient remains with catatonic symptoms, his family is contacted. He was single and had no children, graduated in Business with 22 years, working as an employee until age 41, when he established his own company. He was financially solvent and maintained a close bond with his family of origin. The family denies family or personal medical history of interest or consumption of toxic substances. Three years before the current episode he presented a manic episode that required psychiatric admission and a combined treatment with 1500mg/day of valproic acid and 15mg/day of aripiprazole. The family suspects abandonment of medication after a year and a half of treatment. Since then family members report the emergence of economic problems and progressive decrease in contact with them, while being irritable and distrustful, taking the last year in a situation of homelessness and no family relationship.

During his admission the study of possible organic causes is extended. Thyroid hormones are in normal ranges and syphilis, HAV, HBV, HCV and HIV serologies are negative. Cranial CT and lumbar puncture do not show alterations. Due to abdominal hematoma, abdominal-pelvic CT and abdominal ultrasound are requested. These tests suggest a picture of acute gangrenous cholecystitis, beginning antibiotic treatment. Complications secondary to prolonged decubitus in the form of scrotal ulcers are also observed. In addition, given a high clinical suspicion of scurvy, intravenous treatment is started with 1 gram of vitamin C daily.

The dose of lorazepam is increased up to 8mg/day orally. After a week at this dose, together with the treatment of the underlying medical conditions, the catatonia picture disappears. After resolution, the dose of lorazepam is progressively reduced to 3mg per day.

Once the catatonia is resolved, the presence of a major depressive episode with psychotic symptoms is observed in the context of a probable bipolar disorder type 1. Based on the data provided by the patient and his family, the depressive episode is suspected to have a longer duration. a year, when the patient began to be suspicious of the family and was isolated, losing contact and emerging from abandonment. As a treatment for bipolar disorder in the depressive phase with psychotic symptoms, olanzapine 5mg/day, valproic acid is started up to 1500mg/day and venlafaxine delays up to 150mg/day.

As a final diagnosis, an unspecified catatonia is proposed. It is not possible to clarify the main cause before the affective disorder and the different concurrent organic conditions: Wernicke's disease of uncertain origin (nutritional / toxic), acute gangrenous cholecystitis, hypokalaemia, hyponatremia and / or scurvy.

The patient is discharged with the following daily treatment: lorazepam 3mg, olanzapine 5mg, valproic acid 1500mg, venlafaxine retard 150mg, thiamine 900mg, vitamin complex B1, B6, B12 500mg, ceftriaxone 2 grams and vitamin C 200mg.

The presentation of this case is intended to reflect the importance of exploring possible organic causes of catatonia despite the presence of a psychiatric history. The coexistence of organic and psychiatric disorders in catatonic conditions is frequent. Carrying out a complete history and physical examination that includes the evaluation of possible organic, psychiatric and iatrogenic pharmacological etiologies, together with the performance of the complementary tests that are suggested by the clinical findings, is essential in catatoniform cases.

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Methylphenidate as a short-term adjunct therapy in bipolar depression – case report

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Dear Editor,

Adjunctive use of methylphenidate has been described for the treatment of bipolar depressive disorder. It has been suggested that this drug could ameliorate symptoms of fatigue and cognitive impairment in depressed patients. However, questions have been raised about its safety in bipolar disorder and this therapeutic option remains poorly studied. We describe a case of bipolar depression treated with adjunctive methylphenidate. The management of this patient was challenging due to rapid mood swings, treatment-resistant symptoms and difficult choice of therapeutic approach because of his comorbidities and past history with psychotropic drugs. He didn't respond to first-line treatment, namely the association of two mood stabilizers, an atypical antipsychotic and a serotonin-specific reuptake inhibitor; and there was only partial response to treatment with a norepinephrine-dopamine reuptake inhibitor. As he maintained limiting complaints of fatigue, lack of initiative and cognitive impairment, a decision to treat with methylphenidate was made. The residual symptoms rapidly and completely subsided and he continued this therapeutic regimen for one month, with the clinical benefits enduring for at least six months after symptom remission. He reported no side effects. This case suggests that augmentation with methylphenidate could be a therapeutic option as a second-line treatment for patients with bipolar disorder and specific residual depressive symptoms. Also, it might work as a short time administering drug with sustained therapeutic effects, which could be of interest in patients with poor therapeutic compliance. We believe that methylphenidate can be a safe and effective therapeutic option to consider in this type of setting.

Introduction

Bipolar disorder is a chronic, severe and disabling mental illness, defined by the alternation of manic and depressive periods with euthymic mood states between episodes[1]. While mood stabilizers and atypical antipsychotics usually provide rapid and effective amelioration of manic states, treatment of bipolar depression is commonly more challenging, since these drugs are not as efficient in treating depressive symptoms. Moreover, antidepressants appear to be less effective in comparison to unipolar depression and carry the added risks of induced mania and rapid cycling[2,3]. Thereby, bipolar depression remains a major source of suffering for most patients, being associated with great disease burden and disability[4].

Methylphenidate is a psychostimulant drug with a structure similar to that of amphetamines. It blocks dopamine and noradrenaline reuptake, therefore increasing the transmission of these two neurotransmitters in certain parts of the brain, namely in the prefrontal cortex[5]. While more commonly used to treat attention-deficit hyperactivity disorder (ADHD), it has been suggested that methylphenidate could be of benefit as an adjunct therapy for treatment-resistant depression. Described benefits of methylphenidate for the treatment of major depressive disorder include a faster onset of action and the improvement of symptoms usually not targeted by regular antidepressants, like fatigue and cognitive impairment[6]. These symptoms are also fre-

quently seen as residual depressive complaints in patients with bipolar disorder and it has been suggested that methylphenidate could be useful in this setting[7]. Nonetheless, despite some promising results[2,4], the role of methylphenidate in the treatment of bipolar depression is poorly studied. There is no consensus on the best dosage to use, with reports varying from 5 to 60 mg/day[2,4,8]. To date, only one systematic review and meta-analysis was published regarding the use of dopaminergic agents in the treatment of bipolar depression. It concluded that these agents, including methylphenidate, as add-on treatment, were associated with a greater likelihood of clinical response and remission compared to placebo[8]. Well-designed, randomized, controlled trials are lacking, possibly due to fear regarding misuse or abuse of methylphenidate and possible side effects, such as induction of mania, mixed features or rapid cycling[3]. Methylphenidate can, indeed, increase the risk of mania in patients with bipolar disorder[9]. However, this is not the case when used simultaneously with a mood stabilizer[8,9]. Therefore, it is of utmost importance that these drugs are always used in co-therapy.

Some authors highlight the possible similarities between methylphenidate and bupropion regarding their mechanism of action, namely the blocking of the dopamine and noradrenaline transporters. This can be of relevance, since bupropion is a generally safe and commonly used antidepressant in bipolar disorder, with possibly less risk of manic switch compared to other antidepressants[4]. Assuming that these shared mechanism of action mediates the antidepressant effect of bupropion, this could mean that methylphenidate could share some of its properties and, therefore, be of use in bipolar depression.

We present a case of a patient with bipolar depression who failed to respond to conventional treatment, but showed partial response to treatment with bupropion and full symptom remission with methylphenidate augmentation.

Case Report

Mr. C is a 35 year-old male, single, living with his parents. He has no history of alcohol or drug abuse. Following a manic episode, he was diagnosed with bipolar disorder. In the following years, he had 3 additional manic episodes and 2 depressive episodes that required 3 inpatient ward admissions and 2 day-hospital admissions. His condition is particularly difficult to manage, with treatment-resistant symptoms, rapid mood swings and poor therapeutic adherence. As comorbidities, he presented excessive weight and non-alcoholic steatohepatitis. Regarding previous psychopharmacologic experience, he has a history of a manic switch with venlafaxine, liver dysfunction following divalproex and excessive sedation and weight gain with olanzapine. Also, he showed no response to sertraline and quetiapine during depressive episodes.

Shortly after his fourth manic episode, Mr. C presented with depressed mood, psychomotor retardation, anhedonia, lack of initiative and cognitive symptoms such as difficulty to concentrate and to remember words and the subjective feeling of being "blocked". At the time, he was medicated with lithium 1000 mg/day, carbamazepine 800 mg/day and aripiprazole 10 mg/day. He was diagnosed with a severe depressive episode without psychotic features.

Taking into account his co-morbidities and previous pharmacologic experience, fluoxetine 20 mg/day was added and aripiprazole dosage was adjusted to 15 mg/day. There was no clinical improvement so fluoxetine was stopped after 5 weeks of treatment. Bupropion was then added and gradually titrated to 300 mg/day, which improved the patient's mood and psychomotor retardation. However, due to incapacitating tremor the dose had to be decreased to 150 mg/day. The tremor subsided but therapeutic benefits sustained. Nevertheless, he continued to complain of fatigue, lack of initiative and cognitive symptoms that limited his everyday life and kept him from doing his everyday activities. Aripiprazole was stopped, due to potential iatrogenic asthenia and sedation, but no improvement was observed.

At this point, Mr. C was taking lithium 1000 mg/day, carbamazepine 800 mg/day and bupropion 150 mg/day and still maintained complaints of incapacitating depressive symptoms. Serum lithium and carbamazepine were in the therapeutic range. All possible therapeutic options were discussed with the patient and a joint decision to add methylphenidate sustained-release 18mg/day was made. He reported that 2 days after beginning the new therapeutic regimen he started to feel great improvements. He had resumed activities he wasn't previously feeling capable of, cognitive symptoms subsided and the subjective sense of "blockade" disappeared. He reported no side effects. A decision to keep the medication and evaluate after a month was made. At the next appointment, Mr. C informed that he had stopped taking methylphenidate 2 weeks prior, because he wasn't able to buy it. However, the improvements observed in his previous consultation were still present. At 6 months follow-up, the patient is still stabilized, with no need to take methylphenidate again or any other medication adjustments.

Discussion

We describe a case of a patient with limiting residual symptoms of bipolar depression successfully treated with adjunctive methylphenidate.

The decision to use a psychostimulant took into account not only the patient's history with other drugs and his co-morbidities but also the presenting symptoms of fatigue, lack of initiative and impaired cognition. In our patient, we opted for methylphenidate. Modafinil, the only other psychostimulant available at the time, induces CYP3A4 which may affect carbamazepine blood levels[10]. Methylphenidate doesn't interfere with the metabolism of carbamazepine, lithium or other commonly used mood stabilizing drugs, thereby presenting as a safer option[11].

We believe that our case raises some important questions. First, it provides evidence that a subgroup of patients that presents with a certain constellation of symptoms could benefit from therapy with methylphenidate, as suggested by other authors[12]. Some residual symptoms of bipolar depression, such as fatigue, psychomotor inhibition and concentration difficulties, have been associated with central dopamine and noradrenaline depletion[13,14]. By increasing the concentration of these neurotransmitters, methylphenidate potentially targets these symptoms that are often left untreated by other therapies.

Second, we believe bupropion and methylphenidate may have had a synergic effect on our patient, since these were the only used drugs that showed some clinical benefit. As mentioned before, these two drugs share similar effects in the dopaminergic and noradrenergic neurotransmission so possibly partial responders to bupropion are good candidates for augmentation with methylphenidate.

Finally, to the best of our knowledge, this is the first case report of methylphenidate sustained therapeutic effects in bipolar depression after such a short period of treatment. This is particularly interesting considering the drug's short half-life and that in the treatment of ADHD the therapeutic effects of its sustained-release form are limited to a period of about 12 hours. Possibly, the differences in the underlying etiopathogenesis of the two disorders could explain this observation. It's tempting to wonder if methylphenidate could work as short time administering drug with sustained therapeutic effects in the treatment of bipolar depression, which could be of particular interest for patients with poor therapeutic adherence. We believe that this uncanny finding merits further investigation.

Conclusion

Bipolar depression is still a therapeutic challenge for psychiatrists, as most commonly used treatment options have limited efficacy in these patients. Residual symptoms frequently persist and have a negative impact in patients' quality of life, so new and more effective therapeutic approaches are needed.

Our case report supports the use of methylphenidate in the treatment of bipolar depression. However, evidence of the role of psychostimulants for the treatment of bipolar depression is still scarce and well-designed placebo-controlled studies are needed to clearly determine the usefulness of these drugs.

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