

## BIPOLAR DISORDER - UNDERDIAGNOSIS AND HONOS-PBR

Eva Nora Bongards<sup>1,2</sup>, Mark Agius<sup>3,4,5</sup> & Rashid Zaman<sup>3,5</sup>

<sup>1</sup>School of Clinical Medicine University of Cambridge, Cambridge, UK

<sup>2</sup>Christ's College Cambridge, Cambridge, UK

<sup>3</sup>Department of Psychiatry University of Cambridge, Cambridge, UK

<sup>4</sup>Clare College Cambridge, Cambridge, UK

<sup>5</sup>South Essex Partnership University Foundation Trust, UK

### SUMMARY

*The effect of reassessing patients with depression and resistant depression in a CMHT caseload using the DSM IV criteria for bipolar I and bipolar II conditions inevitably leads to the diagnosis of more patients with bipolar disorder. This has an effect on the number of patients within the population of the CMHT who fall within the psychotic clusters of HONOS-PBR.*

*This should effect the resources which will be allocated to deal with the patients in the team.*

**Key words:** bipolar disorder - Health of the Nation Outcome scales

\* \* \* \* \*

### INTRODUCTION

Bipolar affective disorder (BD) is a psychotic illness characterised by mood changes that exceed the normal range.

The main symptoms are depression (on average 31.9% of weeks in BD I (see below) (Judd 2002) and 50.3% of weeks in BD II (Judd 2003)), mania (on average 8.9% of weeks in BD I (Judd 2002)) or hypomania (on average 1.3% of weeks in BD II (Judd 2003) and mixed states (on average 5.9% of weeks in BD I (Judd 2002) and 2.3% in BD II (Judd 2003)). BD is also associated with several comorbidities, including generalised anxiety disorder (GAD), panic disorder and obsessive-compulsive disorder (OCD) (Perugi 2001), as well as substance abuse (Regier 1990).

It is thought to lie on a spectrum of disorders, which, according to Tavormina et al. 2006, includes unipolar depression (Tavormina 2005). This, together with the predominance of depressive over manic episodes and multiple other factors, leads to frequent misdiagnosis of BD – particularly as unipolar depression (Hirschfeld 2003). It has been estimated that up to 69% of patients now known to have BD were misdiagnosed at least once before receiving their current diagnosis (Hirschfeld 2003, Drancourt 2013).

Two major sub - syndromes have been recognised: bipolar I and II affective disorders (Ayuso-Gutiérrez 1982), which will be the focus of this article. However, one should bear in mind that there are other disorders on the spectrum as well. Patients with BD, particularly BD II, have a high suicide risk (24% cf. 12% in patients with unipolar major depression) (Rihmer 2002).

Patients with BD have been reported to also have more difficulty finding and securing jobs, as well as more problems with regards to relationships with family and friends, than patients with non-bipolar mood

disorders (Morselli 2003). Another difference was a higher number of hospitalisations (Morselli 2003). Furthermore, delayed treatment increases the risk of developing these conditions, notably suicidality (Altamura 2010).

The above illustrates the crucial need for prompt diagnosis and treatment – both to decrease mortality and improve quality of life, with the best outcome being achieved with early intervention. Importantly, incorrect treatment with antidepressants may push patients towards developing manic symptoms (Peet 1994, Ghaemi 2003) and those of mixed states (Ghaemi 2003), thereby exacerbating the problem, particularly since mixed states carry a particularly high risk of suicide (Rihmer 2008). A community mental health team (CMHT) in Bedford has therefore carried out several audits to assess whether it is possible to increase the sensitivity of diagnosis of BD in order to improve diagnosis and catch cases as early as possible (see materials and methods).

This follows on from previous studies that had indicated that most patients with affective disorders were actually in the bipolar spectrum (Tavormina 2007). A further consequence of identifying more patients with BD II is that when using Health of the Nation Outcomes Scales, Payment by Results (HoNOS-PbR), these patients would be grouped to a higher cluster – usually 11, 12 or 13, compared with patients with unipolar depression (Wing 1996).

This is important financially, as more funding is available to treat patients who have been assigned to the psychosis clusters (10-17) compared with the non-psychotic ones.

Hence, correctly diagnosing patients to have BD not only enables prompt commencement of the correct treatment, but also allows more suitable funding of appropriate long-term therapy.

## MATERIALS AND METHODS

The data of all patients registered with a community mental health team (CMHT) in Bedford at the time was analysed in November 2006, September 2007, August 2010, June 2011 and February 2013 with regards to psychiatric diagnosis - particularly looking at the numbers of patients diagnosed with BD, using an excel database that contains all patients' diagnoses.

All patients that had been discharged from the outpatient clinic, had been referred on, or had passed away between audits were excluded from subsequent analyses, but not from previous analyses, in order to obtain an accurate picture of the epidemiology of the outpatient population *at the time of each analysis*.

The November 2006 audit (Agius 2010) was performed to assess the baseline of diagnoses Prior to adjusting the diagnostic criteria.

It showed that no patients had to that date been diagnosed with BD II. The DSMIV - TR diagnostic criteria (American Psychiatric Association 2000) were then constructed into 29 Questions (Agius 2013), which were used to reassess all patients with recurrent depressive disorder, anxiety and depression, unipolar depression and psychotic depression in the outpatient clinic, in order to identify whether patients had BD.

Patients who had already been diagnosed with BD were reassessed too.

This was subsequently validated using the mood disorder questionnaire developed by Hirschfeld et al. (2000).

Furthermore, a full longitudinal history as well as a family history were obtained from all patients.

Reevaluation of diagnoses was completed by February 2013. Preliminary results after reviewing some of the patients were obtained in September 2007 (Agius 2010), showing increases in the numbers of BD diagnoses compared with the baseline, as well as several cases of BD II.

The results were expected to be even more dramatic after reassessment of all patients.

The current audit examines the data from August 2010, June 2011 and February 2013. In all datasets, the numbers of all diagnoses were counted and their proportions analysed. If a patient had multiple individual diagnoses, these were counted separately.

Conditions like chronic fatigue syndrome, dissociative disorders and Münchhausen's syndrome, as well as several others, were grouped in the category "other".

Furthermore, substance-induced psychosis was included in the "other psychosis" section, but not in the "alcohol and drug related problems" category. Phobias and panic disorders were classed as anxiety disorders.

The results have been presented in a graphical form in a previous paper, here we shall simply summarise the changes in proportions of various diagnoses, as they refer to HONOS-PBR scores.

### 1)

A total of 805 patients was analysed in the August 2010 dataset, 809 in the June 2011 dataset and 544 in the February 2013 dataset, yielding 1054, 1069 and 775 diagnoses, respectively. Unfortunately, no data on the number of patients analysed in November 2006 and September 2007 was available, but 391 and 453 diagnoses, respectively, were obtained.

The analysis will focus on the percentages of the following diagnoses:

- Total Bipolar,
- Bipolar I Affective Disorder,
- Bipolar II Affective Disorder,
- Recurrent Depressive Disorder
- Unipolar Depression

The total percentage of BD diagnoses increases steadily from 2006 (10.5%) to 2013 (20.6%), with the exception of September 2007 (14.3%), which shows a higher percentage of BD diagnoses than August 2010 (12.7%) and even June 2011 (13.4%). There are several possible reasons for this, which will be discussed below.

Furthermore, there is a steady increase in the percentage of BD II diagnoses throughout the years: there are none present in 2006, while in 2013 they represent 9.7% of all diagnoses made.

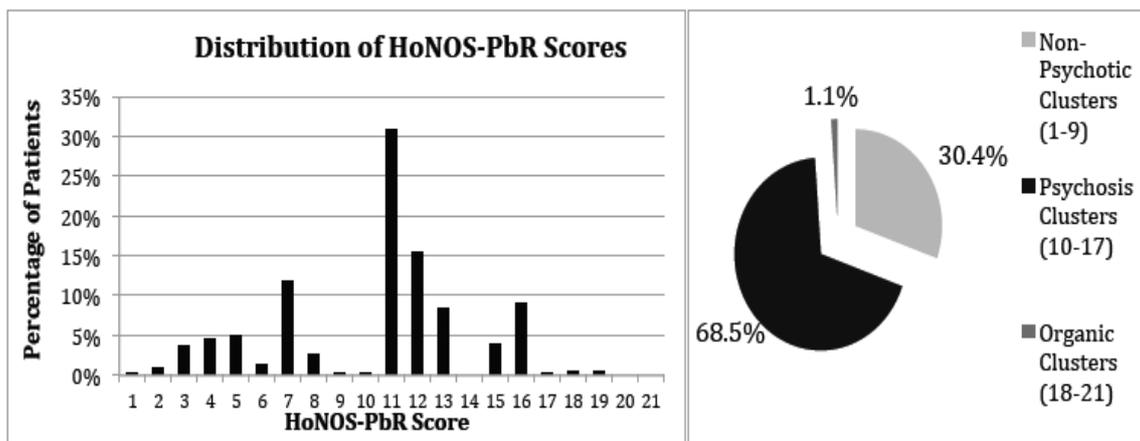
Furthermore, as more patients are being diagnosed with BD II, the percentage of BD I diagnoses decreases from 10.5% in 2006 to 7.3% in 2011, but then it increases again to 11.0% in 2013. Two further conditions that lie on the bipolar spectrum were recognised in 2010 and 2011 but not in the other years: dysthymia (6 and 5 patients in 2010 and 2011, respectively) and cyclothymia (2 patients both in 2010 and 2011). This may be because they were not recognized as part of the bipolar spectrum in 2006 and 2007, but may have been re-diagnosed as BD II in 2013. Equally, these patients may not have been registered with the CMHT in 2006, 2007 and 2013.

As predicted, as more patients are being diagnosed with BD, there is a steady decrease in the percentage of patients diagnosed with recurrent depressive disorder and unipolar depression, from 16.1% and 18.7%, respectively, in 2006 to 4.8% and 8.0%, respectively, in 2012.

### 2)

A total of 542 out of the 544 patients registered with the Bedford CMHT in 2013 have been assigned HoNOS-PbR scores, the distribution of which is shown in Figure 1.

HoNos-PbR is a rating scale which has been devised to facilitate the allocation of funds to mental health services depending on the difficulty for treatment presented by their caseload. It is based on the original HoNoS scale (Health of the nation outcome scales) and shares their limitations in that it is in fact too basic a scale to identify anything but the most gross changes in symptomatology.



**Figure 1.** Distribution of HoNOS-PbR Scores in the Bedford CMHT in February 2013

Thus psychotic symptoms can vary on a rating of 0 to 4, as can depressive symptoms.

On the basis of these several ratings, patients are put into clusters, reflecting the difficulty (and hence resource intensiveness) of each case.

However, there are particular ratings for psychotic illness, 10-15, which imply a much higher classification than depression or recurrent depressive disorder (1-6 approximately). Bipolar illness, including bipolar II disorder rates as a psychotic condition, even when under control. So do psychotic conditions such as schizophrenia, schizoaffective disorder, and delusional disorder. Hence it comes as no surprise that, as more patients are described as bipolar, which for them is a more accurate diagnosis by the criteria of DSM IV, the number of patients in the psychotic clusters rises, while the number of patients in the lower clusters reciprocally falls.

Unfortunately no comparisons can be drawn with previous years, since no data is available for/from those, but it can be seen that the vast majority of patients is within the psychosis clusters.

From the results it is clear that most patients are within the psychosis clusters of the HoNOS-PbR score.

This may have implications for the funding available to this CMHT to treat their patients appropriately. Despite this, the authors have sometimes questioned the usefulness of the HoNOS-PbR score: it has been very difficult to assign some of the patients to a particular cluster, since they have multiple diagnoses and there can only be one HoNOS-PbR score per patient.

This is particularly difficult in the light of increasing proportions of patients receiving multiple diagnoses, as we have previously commented upon. In order to assign a single HoNOS-PbR score when multiple different ones would be possible, one has to decide which diagnosis 'trumps' another one; something that provides a real challenge. Nevertheless, the data presented here may allow mental healthcare resources to be more efficiently distributed according to patient needs.

## LIMITATIONS

The main limitation was that the data from 2010, 2011 and 2013 was analysed by a different individual than the data from 2005 and 2006. The individual who analysed the 2010-2013 data was unable to access the database as it had been in 2005 and 2006, only being able to access the already counted diagnoses.

This makes comparison between the different sets of years very difficult. It is therefore very reassuring that the expected trend of increases in BD I and especially BD II diagnoses is evident even from 2010 to 2013, as is the trend of decreases in the percentages of patients diagnosed with unipolar depression and recurrent depressive disorder.

The authors are therefore confident that the change in diagnoses is real. A further limitation is that the patient population itself did not stay exactly the same.

Although it was assumed that it stayed fairly constant, it is possible that more BD diagnoses are being made, because there were more patients with BD registered with the CMHT in February 2013 than in November 2006. One would have had to analyse only those patients in February 2013 whose diagnoses had already been studied in November 2006, in order to control this limitation.

## CONCLUSION

The reassessment of patients with recurrent depressive disorder and depression in a CMHT caseload using the DSM IV criteria for bipolar I and bipolar II conditions inevitably leads to the diagnosis of more patients with bipolar disorder. There are also often comorbidities with multiple diagnoses, common ones being anxiety disorders, obsessive compulsive disorder and borderline personality disorder. The consequence of this is that when such an assessment is done, more patients within the population of a Community Mental Health Team are rated within the higher (psychotic) clusters of HoNOS-PbR.

**Acknowledgements:** None.

**Conflict of interest:** None to declare.

## References

1. Agius M, Murphy H: Proving that a patient has Bipolar Disorder. In print 2013.
2. Agius M, Murphy CL, Zaman R: Under-diagnosis of bipolar affective disorder in A Bedford CMHT. *Psychiatria Danub* 2010; 22( Suppl 1):S36-7.
3. Altamura AC, Dell'Osso B, Berlin HA, Buoli M, Bassetti R, Mundo E: Duration of untreated illness and suicide in bipolar disorder: a naturalistic study. *Eur Arch Psychiatry Clin Neurosci*. 2010; 260:385-91.
4. American Psychiatric Association: *Diagnostic and Statistical Manual of Mental Disorders. Fourth Edition, Text Revision*. Washington, DC: American Psychiatric Association, 2000.
5. Ayuso-Gutiérrez JL, Ramos-Brieva JA: The course of manic-depressive illness. A Comparative study of bipolar I and bipolar II patients. *J Affect Disord* 1982; 4:9-14.
6. Drancourt N, Etain B, Lajnef M, Henry C, Raust A, Cochet B, et al: Duration of untreated bipolar disorder: missed opportunities on the long road to optimal treatment. *Acta Psychiatr Scand* 2013; 127:136-44.
7. Ghaemi SN, Hsu DJ, Soldani F, Goodwin FK: Antidepressants in bipolar disorder: The case for caution. *Bipolar Disord* 2003; 5:421-33.
8. Hirschfeld RM, Williams JB, Spitzer RL, Calabrese JR, Flynn L, Keck PE, et al: Development and validation of a screening instrument for bipolar spectrum disorder: the *Mood Disorder Questionnaire*. *Am J Psychiatry*. 2000; 157:1873-5.
9. Hirschfeld RM, Lewis L, Vornik LA: Perceptions and impact of bipolar disorder: how far have we really come? Results of the national depressive and manic-depressive association 2000 survey of individuals with bipolar disorder. *J Clin Psychiatry* 2003; 64:161-74.
10. Judd LL, Akiskal HS, Schettler PJ, Endicott J, Maser J, Solomon DA et al: The long-term natural history of the weekly symptomatic status of bipolar I disorder. *Arch Gen Psychiatry* 2002; 59:530-7.
11. Judd LL, Akiskal HS, Schettler PJ, Coryell W, Endicott J, Maser JD et al: A prospective investigation of the natural history of the long-term weekly symptomatic status of bipolar II disorder. *Arch Gen Psychiatry* 2003; 60:261-9.
12. Morselli PL, Elgie R, GAMIAN-Europe: GAMIAN-Europe/BEAM survey I-global analysis of a patient questionnaire circulated to 3450 members of 12 European advocacy groups operating in the field of mood disorders. *Bipolar Disord* 2003; 5:265-78.
13. Peet M. Induction of mania with selective serotonin reuptake inhibitors and tricyclic antidepressants. *Br J Psychiatry* 1994; 164:549-50.
14. Perugi G, Akiskal HS, Toni C, Simonini E, Gemignani A: The temporal relationship between anxiety disorders and (hypo)mania: a retrospective examination of 63 panic, social phobic and obsessive-compulsive patients with comorbid bipolar disorder. *J Affect Disord* 2001; 67:199-206.
15. Regier DA, Farmer ME, Rae DS, Locke BZ, Keith SJ, Judd LL et al: Comorbidity of mental disorders with alcohol and other drug abuse. Results from the *Epidemiologic Catchment Area (ECA) Study*. *JAMA* 1990; 264:2511-8.
16. Rihmer Z, Kiss K: Bipolar disorders and suicidal behaviour. *Bipolar Disord* 2002; 4(Suppl 1):21-5.
17. Rihmer A, Gonda X, Balazs J, Faludi G: The importance of depressive mixed states in suicidal behaviour. *Neuropsychopharmacol Hung* 2008; 10:45-9.
18. Tavormina G: 2<sup>nd</sup> Workshop of Franciacorta - Nov 2005 Iseo (Italy) - (unpublished data). *J Clin Psychiatry* 2003; 64:161-74.
19. Tavormina G, Agius M: A study of the incidence of bipolar spectrum disorders in a private psychiatric practice. *Psychiatr Danub* 2007; 19:370-4.
20. Wing JK, Curtis RH, Beevor AS. *HoNOS: Health of the Nation Outcome Scales: Report on Research and Development July 1993 - December 1995*. London: Royal College of Psychiatrists, 1996.

Correspondence:

Mark Agius, MD  
SEPT at Weller Wing, Bedford Hospital  
Bedford, Bedfordshire, MK42 9DJ, UK  
E-mail: ma393@cam.ac.uk