

Impairment Cognitive in Bipolar Disorder

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COLUMN ARTICLE

The bipolar disorder (BD) is a chronic and serious psychiatric disease. For 2011, its lifetime prevalence in worldwide were 0,6% for bipolar type I disorder (BD-I), 0,4% for bipolar disorder II (BD-II), 1,4% for subthreshold BD, and 2,4% for bipolar disorder spectrum (BDS) [1]. The aetiology and evolution of the cognitive deficits are still unclear, however the relationship between these alterations and low functionality, has not discussion [2]. These deficiencies may also be partly responsible for the inter-episode poor recovery [3]. Thus, the factors associated with cognitive dysfunction include: i) presence of inter-episode symptoms, ii) neuroleptic treatment, iii) lower socio-economic level, and iv) lower premorbid function [3].

A better understanding of the temporal evolution of cognitive deficits is required [2]. Several studies have shown that people with bipolar disorder continue to perceive cognitive impairment after the remission of major mood symptoms [4-6]. Zubieta., *et al.* examined various domains of cognitive function in patients with prolonged euthymia diagnosed with bipolar I disorder (BD-I) in comparison with healthy subjects (control group) [4]. They detected poorer performance on measures of verbal learning, executive functioning and motor coordination in this patients compared to control group; scores on tests of executive functioning were negatively correlated with the number of episodes of mania and depression, social and occupational

measurements were also negatively associated with scores of verbal learning and executive function [4]. Cavanagh *et al.* propose that the impairments cognitive, especially verbal learning and memory, in euthymic persons, may represent a trait rather than state variables -process effects.

This would be related to early treatment, adherence, and the relapses [5]. Clark., *et al.* detected that euthymic subjects with BD had deficits of sustained attention, using the rapid visual information processing (RVIP) task; this is not present in patients with recurrent major depression tested during remission nor is it discriminable in the first-degree relatives (FDRs) of bipolar probands [6]. This people has especially high risk of developing a mood disorder (e.g. bipolar offspring are four times more likely to develop an affective disorder) [7] and FDRs face a 10 to 20-fold increase in risk for BD [8]. Findings in neurobiological studies in bipolar offspring may be related to the underlying neuro-pathophysiology of BD [7].

Bora *et al.* developed a meta-analysis to evaluate cognitive endophenotypes in bipolar euthymic patients (n = 1423 subjects; 45 studies). They emphasized that response inhibition deficit, -a potential marker of ventral prefrontal dysfunction, was the most prominent endophenotype of BD. These endophenotypes also appears to involve fronto-temporal and fronto-limbic related cognitive impairments. Medication effects would be a confounding factor, which contributed to psychomotor slowing in BD subjects. Earlier age of onset was associated with verbal memory impairment and psychomotor slowing. Patterns of sustained

attention and processing speed impairments differ from schizophrenia [8].

Functional neuroimaging methods to study BD have proliferated in recent years, such that functional magnetic resonance imaging. There is a general consensus emerged that BD-I arises from abnormalities in the structure and function of brain emotional control networks. The disruption in early development (e.g. white matter connectivity and prefrontal pruning) leads to decreased connectivity among ventral prefrontal networks and limbic brain regions, especially the amygdala. This failure underlies the onset of mania and after, with progressive changes throughout these networks over time and with affective episodes, to bipolar course of illness [9].

Finally, more research is required to deepen in cognitive alterations, evolution, and biological markers of the BD. An earlier diagnosis and approach of these deficits would allow a better prognosis.

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