Eur. J. Psychiat. 2017;xxx(xx):xxx–xxx

THE EUROPEAN JOURNAL OF PSYCHIATRY

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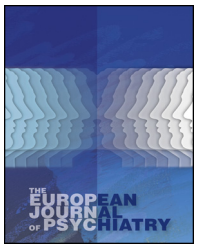

ORIGINAL ARTICLE

Impulsivity in drug-naïve panic disorder

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Received 1 April 2016; accepted 5 January 2017

KEYWORDS
Impulsivity;
Panic disorder;
BIS-11;
PAS;
SCID-I

Abstract
Background: Impulsivity is a key feature of numerous psychiatric disorders. However, the relationship between impulsivity and anxiety disorders is arguable and not well explored. Several methodological considerations related to data interpretation arise when patients previously exposed to psychotropic medication are included in the study population. To address those issues we designed a study in a well defined cohort of treatment-naïve panic disorder patients.
Material and methods: This case-control study was designed to evaluate impulsivity and its dimensions in the group of 21 psychotropic drug-naïve outpatients with panic disorder and 20 healthy controls. The severity of Panic Disorder was assessed with Panic and Agoraphobia Scale (PAS). Impulsiveness was evaluated with the Barratt Impulsiveness Scale, 11th version (BIS-11).
Results: According to our study patients with panic disorders had higher level of both total impulsivity and all impulsivity dimensions comparing to healthy controls.
Limitations: The number of participating subjects was relatively small. The study results apply to drug-naïve panic disorder patients without agoraphobia.
Conclusion: Opposing to the traditional conceptualizations suggesting that impulsivity displays a negative relationship with anxiety this study provides evidence for higher level of impulsivity in drug-naïve patients with panic disorder comparing to healthy controls.

Introduction

Panic disorder (PD) is common and disabling condition being associated with high burdens and characterized by a variable pattern of symptomatology.[1]

Impulsivity is a predisposition to rapid, unplanned reactions without regard to the negative consequences of these reactions[2] and is an of multifactorial concept. There are three impulsivity dimensions: attentional, motor and non-planning. Attentional impulsivity is defined as the inability to focus on the ongoing task and cognitive instability, non-planning impulsivity is the inability to plan and think carefully, orientation towards the present rather than to the future and included self-control, motor impulsivity characterizes acting on the spur of the moment (without inhibition) and perseverance.[3]

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http://dx.doi.org/10.1016/j.ejpsy.2017.03.001

Please cite this article in press as: Jakuszkowiak-Wojten K, et al. Impulsivity in drug-naïve panic disorder. Eur. J. Psychiat. 2017. http://dx.doi.org/10.1016/j.ejpsy.2017.03.001

Impulsivity influences pathogenesis, course, clinical severity of numerous mental disorders[4,5] including anxiety disorders. Still, the relationship between impulsivity and anxiety disorders is controversial and not well explored. Several studies revealed high rates of comorbidity between anxiety disorders and impulse control disorders.[6] Studies on impulsivity in patients with comorbid anxiety disorders also uncovered similar correlation.[7,8] High rate in total impulsive behaviours and comorbid substance abuse in a subgroup of patients with social anxiety disorder characterized by high novelty seeking was reported.[8] Bipolar disorder with comorbid anxiety disorders also seems to present higher levels of impulsivity as compared to healthy controls.[6,9]

Some studies found no correlation between anxiety and impulsivity. Anxiety evaluated with the State-Trait Anxiety Inventory revealed negative correlation with the risk for violent behaviour.[10] No correlation between anxiety and impulsivity was observed in of adolescents.[11] Studies in a sample of violent adolescents with high impulsivity levels found no correlation between anxiety and impulsivity either.[12,13] The divergent findings may be partly related to methodological differences including sample size, selection criteria, unmatched groups, sex, age, pharmacotherapy and different assessment tools. Anxiety and impulsivity are two main risk factors of suicidality.[5] The risk of suicide in panic disorder patients is partly due to a secondary depression. However it is speculated there are anxiety-specific factors which may interact with the condition of panic disorder to increase risk for subsequent depression and suicidal ideation. These factors are: severity of anxiety, anticipatory anxiety, attentional hypervigilance, avoidance of bodily sensations, fear and insanity.[14]

The aim of the study was to evaluate impulsivity and its dimensions in patients with panic disorder (PD). It was hypothesized that impulsivity is higher in drug-naïve PD patients than healthy controls.

Method

Subjects

We examined 21 psychotropic drug-naïve outpatients with PD and 20 healthy subjects. The inclusion criteria included patients between 18 and 60 years of age diagnosed with PD without agoraphobia based on SCID-I (DSM-IV-TR).[15] The exclusion criteria included the presence of various chronic somatic illnesses and positive history of psychotropic medication including dietary supplements.

The control group consisted of 20 healthy subjects matched by age and sex. The structured clinical interview for DSM-IV-TR non-patient edition was used to interview the healthy control.[15] None of them had history of serious medical illnesses. Exclusion criteria were: positive history of psychotropic medication exposure, any Axis I or II disorders.

The study was carried out in accordance with the Declaration of Helsinki with the approval of the Ethic Research Committee of the Medical University of Gdańsk, Poland. Written consent for the study was obtained from each of the participants.

Protocol

The severity of Panic Disorder was assessed with (PAS) Panic and Agoraphobia Scale, CGI-S (Clinical Global Impression-Severity)[16] and SDS (Sheehan Disability Scale)[17]. The differentiation of anxiety and depression was screened with HADS (Hospital Anxiety and Depression Scale).[18]

Impulsivity was evaluated with the Barratt Impulsiveness Scale, 11th version (BIS-11). According to different studies within normal limits for impulsivity in health controls are in the range of 50–60 or between 52 and 71.[19,20]

Statistical analysis

The statistical analysis was performed using StatsDirect v.2.7.9 (http://www.statsdirect.com). Differences between groups for discrete variables were assessed using the chi-square test, while the Student's *t*-test was used for normally distributed variables. The Mann–Whitney *U*-test was used for the remaining variables. The Pearson's correlation coefficient was used to assess correlations between the obtained variables. All tests were two-tailed. The level of significance was set at $p < 0.05$.

Results

Table 1 summarizes demographic and clinical variables. There were not significant differences in terms of gender, BMI, WHR or age between patients and controls. It has revealed significantly higher levels of impulsivity in drug-naïve PD patients comparing to controls in total impulsivity [$p < 0.0001$; 95% CI = 10.8 (6.0, 15.8)] and its two dimensions: attention [$p < 0.0001$; 95% CI = 5.7 (3.8, 7.6)] and motor [$p = 0.006$; 95% CI = 3.6 (1.1, 6.1)]. However, no significant difference was found between non-planning impulsiveness in healthy and panic disorder patients.

In post hoc analysis (Table 2) statistically significant correlation between attentional impulsivity and HADS-A (Hospital Anxiety and Depression Scale – anxiety subscale) in PD patients was found. The level of anxiety significantly correlates positively with attentional impulsivity. Exploratory analysis revealed no other correlations between impulsivity measure and clinical variables.

Discussion

The key findings in the presented study show significantly higher levels of total impulsivity and its attentional and motor dimensions in drug-naïve PD patients as compared to healthy controls.

Our results are consistent with numerous studies reporting higher impulsivity in anxiety disorder patients.[8,21,22]

The study largely corroborates with Del Carlo et al.,[7] who revealed higher total impulsivity in all its dimensions in anxiety disorder patients than in healthy control. This study results are in line with data on impulsivity in patients receiving pharmacological treatment for anxiety disorders (e.g. panic disorder, social anxiety disorder, obsessive-compulsive disorders) presenting higher scores in total impulsivity and

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