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The Occurrence of Mental Automatisms, Hallucinations and Pseudohallucinations in Severe Unipolar Affective Disorder and the Differentiation of Catatonic Symptoms

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ABSTRACT

The aim of the article is to present several important informations about the diagnosis of psychotic major depression (PD). PD is considered to be the most severe type of depression, and can progres to catatonia. Antipsychotic agent administration may be worth when psychotic symptoms will develop. Hallucinations occur outside the patient's body and are in his perceptual field, adequate for a given sense. Pseudohallucinations happen inside the patient's body or in a place outside the perceptual field. In PD, the contents of these symptoms are mainly nihilism, punishment, guilt, sadness and despondency. Approaching voices (pseudo/hallucinations) may be aggressive towards the patient. The algorithm for the differential diagnosis of hallucinations, pseudohallucinations and mental automatisms has been presented. Catatonia can appear in the most severe form of PD, especially in eldery. The psychopathological catatonic syndrome can occurr in two forms – hypokinetic or hyperkinetic. In the case of the second one, it may indicate agitated depression.

INTRODUCTION – DIFFERENTIAL DIAGNOSIS OF HALLUCINATIONS AND PSEUDOHALLUCINATIONS IN DEPRESSION

Due to the high mortality and risk of suicide, severe unipolar affective disorder with psychotic symptoms (Psychotic Depression, PD) is one of the most serious mental illnesses [1]. It should be noted, that by first clinical classifications, PD was considered as the type of manic-depressive disorder (Kraepelin). Currently, International Classification of Diseases – 10th version (1992) defined PD as the unipolar major depressive disorder (F32) in its most severe form, while the 5th version of Diagnostic and Statistical Manual of Mental Disorders (DSM-5) has indicated, that psychotic features are not associated with severity of the disease. Epidemiological value of PD prevalence is estimated at 0,4% with older adults group in particular risk [2]. In adolescent group experiencing major depressive disorder, psychotic features was expressed by 18% of patients, while in hospitalized population this value was 45% [3]. The aim of the article is to present and to systematize several psychopathological phenomena, which can occur in the PD. The issue of positive symptoms, such as hallucinations, pseudohallucinations and mental automatisms, was particularly taken into account. Second part of the article discusses some psychomotor symptoms, especially catatonia, and its treatment options.

International Classification of Diseases – 11th (Version: 02/2022) describes PD as an "episode of depressive disorder, severe, with psychotic symptoms (encoded as 6A70.4). Therefore, it still allow psychotic features as indicators of the severity of

episode. Apart from the basic symptoms of a depressive episode, some additional symptoms, called "positive", can be observed. By the term of "positive" we can define that kind of symptoms, which are adding some novel, abnormal phenomena to the mental sphere. For instant, the most characteristic positive symptom is hallucination (*hallucinatio*). These symptoms are widely distributed among PD patients: they can hear some voices, sounds or less often visual or cenestetic (somatic) hallucinations. Kumari et al. [4] has indicated, that in most of cases, auditory verbal hallucinations (voices) were talking to the patient in second person (you), whereas in schizophrenia they were using mainly third person (he/she). Sometimes clinical experience can show, that the presence of voice hears in affective disorders is associated with actual state of mood. Research studies are not fully consistent with this discovery and it cannot be used to differential diagonsis of affective and psychotic disorders [5-7].

In the context of PD, delusions could be the most important symptoms in the clinical profile. Usually, they are concentrated on patient's fault, punishment or hypochondria. Most extreme cases are characterized by nihilistic delusions and Cotard's syndrome. The patient is convinced that he is dead or non-existent, never born, and this is related to the existential void, which patient experiences. Current research have shown, that the development of delusions in psychotic depression is associated with the increase in suicidal behavior [8]. Moreover, this group of patients is at two-fold higher suicide risk than group without psychosis. The greatest predictor of the occurrence of suicidal tendencies is experiencing both hallucinations and delusions. This is a cumulative effect in such a situation [9].

It is important to monitor the dynamics of psychosis in depression to avoid the suicidal attempts. The term of dynamics of delusional-hallucinatory system could be defined as some changes in delusions and hallucinations, such as appearance of new voices and disappearance of old voices or delusional attitude towards novel, previously well-perceived objects. According to this, it is possible to directly track the effectiveness of therapy and program an individual treatment protocol. For proper psychopathological diagnosis it is necessary to establish differences between particular symptoms. This will enable their more accurate and in-depth assessment. For this purpose, a diagnostic algorithm for clinicans has been published, which can facilitate the differentation of hallucinations, pseudohallucinations and mental (sensory) automatisms [10] (Table 1).

Table 1: Diagnostic algorithm for hallucinations, pseudohallucinations and mental automatisms in schizophrenia.

Hallucinations	Pseudohallucinations	Mental automatisms
Projection to outside	Without external projection	Without external projection
The patient may or may not influence the content	The patient may or may not influence the content	The patient can not influence the content
Hallucinations may occur in visual modality	Pseudohallucinations may occur in visual modality (images in the head or in the eyes)	Automatisms do not come from visual modality; even phenomena that affect the patient are not included
This category do not involve the internal organs or the inside of the body	It may include more complex experiences from the body such as tearing the viscera, patient has a feeling that he is being torn from the inside	Simple sensations such as waves, currents, paresthesia, a sense of distortion in organs
The realization judgement is present	The realization judgement is present	Without the realization judgement
Mainly from the auditory modality, in the form of auditory verbal hallucinations	Mainly from the auditory modality, in the form of auditory verbal hallucinations	These are more focused on thinking processes – sending thoughts, making them loud, doubling or echoing patient's thoughts
When the voice is heard, usually patient can hear it well	When the voice is heard, usually patient can hear it well	The voice can be difficult to identify and can fall within the scope of scraps of thoughts, unbound concepts, detached 'thought shadows' – little mental automatism (patient has difficulties with distinguishing uncontrolled thoughts from auditory hallucinations)

Source: (Grabowski [10])

MENTAL AUTOMATISMS

The term of sensory or mental automatisms was developed by French psychiatrist, Gaëtan Gatian de Clérambault (1872-1934), who defined it as 'a certain clinical syndrome consisting of automatic phenomena in three registers: motor, sensory and ideo-verbal' [11]. The key element, in its first author's mind,

was suprising occurrence of this kind of symptoms. In comparison to obsessions or compulsions, in automatisms patient felt that these events are not belong to him and are alien. According to the modern psychopathology, it ought to be known as hallucinations or pseudohallucinations. de Clérambault has indicated, that mental automatisms are not progressing from mental content, but rather by the fundamental disorder of formal structure of normal experience. Moreover, it is quite neutral in the affective sphere, at least primitively.

This concept supposed to be revolutionary in psychiatry, becouse, in author's mean, it should incorporate all types of hallucinations. Overall, it refers to abnormalities in general process of motor, sensory, affective and ideo-verbal functioning. However, mental automatisms could merge also some non-hallucinatory symptoms. de Clérambault described two types of automatisms: positive (with new parts of experience) and negative (disintegration of previous some factors). First subtype is characterized by adding and intrusion of novel phenomenas, while second can be identified by the inhibition of some elements. This division is similar to the positive and negative symptoms in schizophrenia distinguished by Crow and Andreassen, which was created later than automatisms concept.

Another important process have been described as minor (*petit automatisme*) and major sensory automatisms (*grand automatisme*). Some definitions of the minor automatism may be vary depending on the authors. Primary, it was understood as mild or subtile ideo-verbal phenomena in positive and negative characterization, which have weak impact on patient's subjective functioning [12]. In main amount of cases, it has not any significant content and affective charge. Jaroszyński [13] gave a more specific definition of what kind of mental phenomena can be included in this category. It is the emergence of scraps of thoughts, unrelated concepts and an emptying of memories. Despite the fact that these symptoms are very difficult to diagnose, experienced clinicans may notice in an in-depth clinical conversation behaviors, that could indicate the presence of minor automatism. The major automatism is widely present at several neuropsychological systems, such as motor, sensory, affective and ideo-verbal. It seems to have a significant influence on patient's functioning. However, it is not clear, what kind of specific psychopathological symptoms could be a basis of this automatism.

Table 2: Examples of ideoverbal automatisms.

Type of automatism	Explanation	Clinical comment
Ideoverbal – the anticipation of thought	Patient have a feeling that his thoughts have been made before he can concentrate	This phenomena has some similar properties as „sending thoughts" delusional symptoms or sense of external control; it may have both delusional and hallucinatory components
Ideoverbal – the enunciation of acts	„Voices" are commenting all, even simple, acts of behavior	Mainly hallucinatory or pseudo-hallucinatory processes; patient can develop the delusional approach for these voices
Ideoverbal – ideorrhoea	Uncontrolled flow of thoughts in intervals	It is similar as some well known psychopathological symptoms, such as: episodic schizoaphasia, logorrhea; usually these could be an effect of the racing thoughts
Ideoverbal – the echo of thought	If patient's thoughts are formed, they are repeated already	The echo of thoughts is the most known ideoverbal automatism; it can be linked with another positive symptom – publicity of thoughts – and has the delusional component
Ideoverbal – false recognitions	Patient has a feeling that someone force him to recognize people the patient claims he has never seen before	It could be interpreted as the inverted Fregoli syndrome; very useful is deep clinical interview, also with the family

Source – own work, Łukasz Grabowski

The theory of mental automatism indicates that not all hallucinatory processes can be recognize as psychotic. Without automatic component some kind of hallucinations are not psychotic. Additionally, if some automatisms approach without descriptive symptoms like delusions or hallucinations, according to this theory, they are still psychotic. It seems unclear, how these automatisms could be diagnosed more objectively. Next issue with this theory is basic difference between delusions and hallucinations. Psychopathologic phenomena such as apophany in delusions or the problem of pseudo- and parahallucinations are omitted. Currently, this concept has almost completely come out of psychiatric practice. de Clérambault postulated, that these symptoms of chronic hallucinatory psychoses have a histological substratum, mainly in cortical neurons [14]. Therefore, the mental automatism syndrome is a result from

some organic disturbances. The truth of this assumption depends on the type of disease where sensory automatisms can be observed (Table 2).

CATATONIC SYMPTOMS IN THE COURSE OF MAJOR DEPRESSION

Catatonic symptoms are quite common in mood disorders, especially PD [15]. In general, eldery patients are most at risk of developing catatonia [16]. Recent research have shown some characteristic neural processes underlying the catatonic syndrome. It was concentrated on the role of dopaminergic and gamma-aminobutyric acid neurotransmitter systems abnormalities and the impairment of N-methyl-D-aspartate signaling, which is associated with glutaminergic system [17].

Psychopathology of catatonic syndromes appears to be heterogenic, which complicates some diagnostic issues considerably. The most important distinction of catatonias is concentrated on the two subtypes:

- Hypokinetic – akinetic (*stupor katatonicus*);
- Hyperkinetic (*furor katatonicus*).

Their common feature is axial psychomotor disintegration. In first subtype, the psychomotor drive is decreased (until it disappears completely), while in second subtype it is increased (sometimes to the very limits). Therefore, these symptoms can be characterized in two categories: *in minus* or *in plus*. This division is not absolute and patient may experience different episodes at certain times in his life. The diagnostic process should be considered in a dynamic aspect. Sometimes, there is a situation that the patient wakes up during stupor, becomes psychomotor excited and after some time returns to the akinetic state.

Clinical profile of hypokinetic state is usually characterized by rapid onset; chronic onset causes a deterioration in the prognosis of recovery. Patient's reduced mobility is observable. Moreover, patient cannot keep up with daily activities (bradykinesia), facial expressions are stiff, communication of affective experiences is disturbed. Patients usually answer questions with increasing delay, until they are completely in mutism (*mutismus*). Numerous and vigorous questions may be helpful for the psychiatrist or psychologist. In addition, patients could look as if they do not care, they withdraws themselves (*autismus*) and turns away from reality (*dereismus*). Some of the characteristics of hypokinetic catatonia are listed below (Table 3).

Table 3: Components of the catatonic hypokinetic syndrome.

Patients with catatonic depression usually are not experiencing severe delusions or cenestetic hallucinations	Even in stupor, awarenes and orientation can be maintained
The mood is depressed, ambivalent or indifferent	If the stupor persists for a long time, the following vegetative symptoms can be observed: metabolic disorders, cyanosis of the limbs, dry mouth or salivation, amenorrhea, and loss of libido
During a catatonic episode, auditory verbal hallucinations with imperative content may appear: „do not eat, drink, move"	Patients may suffer from photophobia and often cover their faces with duvets when they are lying down
During the stupor, patients experience „dream-like" states – this is oneiroid psychosis	Patients with catatonia may have a stereotypical grimace on their faces (ger. *Schnauzkrampf*)

Source: Łukasz Grabowski, own work

A hyperkinetic episode is completely different by symptoms and usually flares up suddenly. In the beginning, there may be hallucinations from all senses (except visual – these may be caused by delirium). Motor excitement is unjustified, and if the interview shows a triggering factor, it is disproportiate to the reaction. Patients sing, dance, jump, cry, laugh, throm themselves to the environment and are able to commit any ruthless act, both to themselves and other people. Affect incontinence is elevated to the maximum degree (Table 4).

Table 4: Components of the catatonic hiperkinetic syndrome.

Patient cannot explain the reasons for the violent behavior	Movement stereotypes are common
Complete impairment of higher feelings	Hallucinations are better remembered than during the stupor and, therefore, can be considered as more severe
This state is very similar to that of the experimentally induced pseudo-rage	Occasionally, explosive behavior may appear in akinetic patients and be characterized by suicidal intent
It is not possible to make any contact during the episode	Even after patient has been calmed down, stereotypes may persist

Source: Łukasz Grabowski, own work

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In the differential diagnosis, it is significant to consider the Kahlbaum's catatonia, which is „natural" catatonic syndrome. It has an episodic course with some psychotic features, remissons and, sometimes, it can be associated with disorganized subtype of schizophrenia [18]. In the case of depression, recurrent catatonia can be a manifestation of mood abnormalities [19], which acts as so-called "mask". Usually subsequent episodes are symptomatologically similar to each other. This makes it necessary to observe the dynamics of episodes each time to assess the progres of treatment.

Research have shown several effective strategies for treating catatonic episodes in depression. For Instance, Intramuscular (IMI) administered lorazepam, diazepam intravenous drip (if lorazepam IMI fails) with physiological saline, have significant clinical effects [20]. Some authors indicate that lorazepam is effective in remission of up to 80% in adults. In order to prevent relapses of catatonia, it should be continued for 3-6 months [21]. In contrast, in geriatric patients the administration of memantine may be beneficial [22].

A very good method of treatment with an increasingly well-known mechanism of action is Electroconvulsive Therapy (ECT) and its antidepressant effect [23]. Compared to the speculative nature of long-term benzodiazepine effects, ECT has this aspect well proven [24]. This should be viewed as an indication in severe depression with psychosis and catatonia [25]. Cohort studies have shown that ECT can significantly reduce the risk of suicide in this group.

CHALLANGES IN THE TREATING OF POSITIVE SYMPTOMS IN THE UNIPOLAR AFFECTIVE DISORDER

It should be noted, that psychotic depression has a low rate of spontaneous recovery [26], what indicates combined methods of treatment. Psychotherapy alone is known with not satisfactory effects [27], however, cognitive approaches can be useful in learning some coping strategies with delusions [28]. Therefore, basic somatic treatment, especially psychopharmacotherapy, should be required.

Before the pharmacotherapeutic process, detailed diagnosis ought to be performed, with the inclusion of the following issues:

- psychosis can be the result of depression in its extreme stage or occur separately
- depression may be the result of a psychotic episode as a response, for instance in schizophrenia
- it is necessary to establish comorbidities that may alter the course of treatment, for example, cardiovascular disorders, thyroid disorders; it is worth checking the results of laboratory tests

In the case of psychotic depression, where psychosis is the result of the depression, antidepressant treatment should be satisfying, eventually with a standard additional agent. Research have shown, that tricyclic antidepressants had especially interesting results, if they were combined with neuroleptic (amitryptyline with perphenazine; [29]). Combining an antipsychotic and an antidepressant is correct in psychotic depression [30]. Monoamine oxidase inhibitor's monotherapy turned out to be less effective than tricyclic antidepressant's monotherapy [31].

SUMMARY

- The article attempts to systematize some psychomotor and positive symptoms
- Positive symptoms vary significantly in depression and it should be monitored to know treatment progres
- Hallucinations are projected outside the patient's body. Pseudohallucinations happen inside the patient's body or in a place outside the perceptual field
- Parahallucinations are associated with damage to the nervous system and do not occur in depression
- Mental automatisms are characteristic for schizophrenia and may indicate a developing schizophrenic process
- Catatonic syndromes can be divided into hypokinetic (*stupor*) and hyperkinetic (*furor*)
- The hyperkinetic subtype of catatonia is associated with agitated depression

Benzodiazepines and ECT are affective methods for catatonia treatment

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