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INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/22797
DOI URL: http://dx.doi.org/10.21474/IJAR01/22797

RESEARCH ARTICLE

CATATONIA: FROM DIAGNOSIS TO MANAGEMENT

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Manuscript Info

Manuscript History
Received: 12 December 2025
Final Accepted: 14 January 2026
Published: February 2026

Abstract

Catatonia is a complex psychomotor syndrome characterized by a range of motor, behavioral, and speech abnormalities. It can occur in the context of psychiatric disorders such as mood disorders, schizophrenia, autism spectrum disorders, and intellectual disabilities, as well as in various medical and neurological conditions including encephalitis, encephalopathies, metabolic disorders, and drug withdrawal. Early recognition and management are crucial to prevent serious psychiatric, organic, and vital complications.Diagnosis is primarily clinical, based on DSM-5-TR criteria, requiring at least three key features such as stupor, catalepsy, mutism, negativism, posturing, stereotypies, or echolalia/echopraxia. Differential diagnoses include obsessive compuls ive disorder, autism spectrum disorder, selective mutism, conversion di sorder, tics, and drug induced movement disorders.Management involv es a comprehensive evaluation of psychiatric and non-psychiatric etiologies, severity assessment using tools like the Bush Francis Catato nia Rating Scale, and appropriate investigations to rule out organic causes. First-line treatment is benzodiazepines, particularly lorazepam, with rapid and effective response in many cases. For resistant or malignant forms, electroconvulsive therapy (ECT) is highly effective, and in some cases, non-invasive neurostimulation techniques such as repetitive transcranial magnetic stimulation (rTMS) may serve as alternatives.Concomitant management of complications related to immobility, malnutrition, and autonomic dysfunction is essential. Early diagnosis, availability of skilled personnel, and access to appropriate therapeutic modalities are critical factors determining prognosis. Advances in neurostimulation have significantly improved outcomes in catatonic patients.

Introduction:-

Psychiatric emergencies in the Moroccan context represent a challenge for the patient, their relatives, as well as for healthcare providers and psychiatric and general hospital structures. Examples include agitation, suicidal crises, panic attacks, catatonia, and many other emergencies, for which early and adequate management determines not only the psychiatric prognosis but also the organic and vital outcomes.Among the emergencies most feared by psychiatrists and emergency physicians is catatonia, whose early and appropriate diagnosis and management improve both the psychiatric and vital prognosis of the patient (1,2).This work aims to provide a detailed overview of catatonia management, taking into account the pharmacological agents available in Morocco.

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Definition:-

Catatonia is a psychomotor syndrome encompassing abnormalities of motor behavior that may last minutes, hours, often days, and sometimes years (3–5).The clinical picture of catatonia is remarkably rich. Observed features may include mannerisms, grimacing, posturing, agitation, stereotypies, fixed gaze, and ambitendency (opposing or contradictory attitudes) (1,2).During patient interviews, mutism, echolalia, echopraxia, and verbigeration can be observed. Withdrawal and negativism are also commonly seen (3,4).Physical examination may reveal waxy flexibility, rigidity, catalepsy, or grasp reflex, along with oppositional behavior (2).

Positive Diagnosis: DSM-5-TR Criteria:-

To diagnose catatonia, at least three of the following criteria must be present:

1. **Catalepsy:** maintenance against gravity of postures imposed by the examiner
2. **Waxy flexibility:** slight and constant resistance to passive movement applied by the examiner
3. **Stupor:** absence of psychomotor activity, with no interaction with the environment
4. **Agitation:** not influenced by external stimuli
5. **Mutism:** absence or near-absence of verbal response (exclude if secondary to a known aphasia)
6. **Negativism:** opposition to or lack of response to instructions or external stimuli
7. **Posturing:** active maintenance, against gravity, of a spontaneously assumed posture
8. **Mannerisms:** caricatures of ordinary actions marked by bizarreness or solemnity
9. **Stereotypies:** purposeless, repetitive, and abnormally frequent movements
10. **Grimacing facial expressions**
11. **Echolalia:** repetition of the examiner's words
12. **Echopraxia:** imitation of the examiner's movements (1,2)

In parallel with psychiatric assessment, it is important to search for autonomic signs of possible malignant catatonia:

- Tachycardia or bradycardia
- Hypo- or hypertension
- Rapid or slow breathing
- Sweating
- Hyperthermia > 38.5 °C or hypothermia < 35 °C (1)

Differential Diagnosis:-

1. **Obsessive–compulsive disorders (OCD):** compulsive rituals may involve repeated behaviors and slowness due to indecision (6)
2. **Autism spectrum disorders (ASD):** stereotyped behaviors involve compulsive and ritualized actions, as well as mannerisms (5,7)
3. **Intellectual disability:** stereotyped behaviors occurring in environmental stress contexts (5)
4. **Selective mutism:** occurring in the context of an anxiety disorder without communication deficits (6)
5. **Acute stress disorder:** occurring in a traumatic context (6)
6. **Conversion disorder:** fluctuating presentation, suggestibility, physiologically inconsistent (6)
7. **Chronic tics:** multiple motor and vocal tics (6)
8. **Gilles de la Tourette syndrome:** complex motor and vocal tics, including echolalia, echopraxia, and grimacing (6)
9. **Developmental coordination disorder:** bizarre, complex motor sequences (6)
10. **Stereotypic movement disorder** (6)
11. **Adverse effects of antipsychotics:** akathisia, parkinsonism, dyskinesia, acute dystonia (1)
12. **Serotonin syndrome** (1)

Etiologies:-

Psychiatric Etiologies:-

Psychiatric causes are the most frequent (75–80%) (1,2):

- **Mood disorders:** bipolar disorder, unipolar disorder
- **Schizoaffective disorder**
- **Schizophrenia**
- **Autism spectrum disorder** (5,9)

- **Intellectual developmental disorder**
- **Acute stress disorder**

In children and adolescents, catatonia is particularly associated with autism spectrum disorders and early-onset psychotic disorders (2,8–10).

Non-Psychiatric Etiologies (20–25%):-
Encephalitides:-
- **Infectious:** HSV1, Syphilis, HIV, HBV, HCV
- **Inflammatory:** multiple sclerosis flare, neurolupus
- **Spongiform:** Creutzfeldt–Jakob disease, fatal familial insomnia
- **Neoplastic**
- **Autoimmune:** Hashimoto's encephalitis, limbic encephalitis with anti-NMDAR antibodies (1)

Encephalopathies:-
- **Toxic:** alcohol, cocaine, ecstasy, hyponatremia, drug-induced
- **Metabolic:** ketoacidosis, severe hyponatremia
- **Deficiency-related:** vitamin B12, folate
- **Neurometabolic disorders:** Niemann–Pick disease type C, Wilson disease, hyperhomocysteinemia, porphyria, xanthomatosis, urea cycle disorder (1,2)

Other Causes:-
- **Epilepsies**
- **Brain tumors**
- **Dementias**
- **Traumatic brain injury**
- **Cerebral infarctions:** parietal, temporal, or thalamic lobes
- **Withdrawal states:** benzodiazepines, clozapine, anticholinergics, alcohol (1)
- **Genetic syndromes:** DiGeorge syndrome (1)

Management:-
Catatonia is not a disease itself but a syndrome requiring thorough investigation of its causes. Associated symptoms may vary, justifying close clinical observation and regular physical examinations (1,2).

Evaluation:-
A standardized assessment should include:
a. **Clinical Examination:** detailed history and neurological exam (1)
b. **Priority Investigations:** exclude abrupt withdrawal (benzodiazepines, alcohol, anticholinergics) and identify organic causes (degenerative, metabolic, immunologic) (1,2)
c. **Symptom kinetics:** evaluate onset and prior neuropsychiatric disorders, especially in older adults (cognitive decline, loss of autonomy) (1,2)
d. **Targeted neurological exam:** identify vigilance disorders, neuropathies, abnormal movements, cerebellar or pyramidal involvement, or oculomotor paralysis (1)
e. **General physical exam:** cardiac and pulmonary auscultation, skin inspection, abdominal palpation (hepatosplenomegaly), lymph nodes, thyroid (1)

Paraclinical Assessment:-
Etiological Workup:-
- **Laboratory:** TSH, fasting glucose, calcium/phosphate/vitamin D/PTH, vitamins B1, B6, B9, B12, ammonia, homocysteine, cholesterol profile, cortisol, CRP, serum protein electrophoresis, serologies (HIV, HBV, HCV, syphilis), anti-DNA, anti-streptococcal antibodies (1)
- **Imaging:** MRI (preferred) to detect focal lesions, degenerative/metabolic/inflammatory signs, intracranial hypertension; CT scan if MRI unavailable (1)
- **EEG:** in altered consciousness, fluctuating symptoms, or suspected epilepsy (1)

- **Lumbar puncture:** in suspected encephalitis, subacute neurological changes, seizures, systemic inflammation, or unexplained infectious syndrome (1)

Pre-therapeutic Assessment: complete blood count, coagulation, electrolytes, renal and liver function, CPK, drug levels, urine toxicology (1)

Severity Assessment:-
Bush–Francis Catatonia Rating Scale (BFCRS): 23 items scored 0–3; total 69 (1):-
- **Malignant catatonia:** febrile catatonia with autonomic instability (tachycardia, tachypnea, sweating); mortality 10–20% (1)
- **Chronic catatonia:** episodes lasting months or years (2,10)

Treatment:-
Benzodiazepines:-
First-line treatment, especially lorazepam, with response in hours to days, efficacy up to 80% (1,2). Start with lorazepam 1–2.5 mg IV (or orally), evaluate after 30 min. Increase dose every 4–12 h until symptoms resolve; daily doses may reach 16–20 mg. Zolpidem may also be used for diagnostic test (1).

Electroconvulsive Therapy (ECT) and other neurostimulation methods:-
ECT is indicated for resistant or malignant catatonia. Pre-anesthesia evaluation and MRI to rule out intracranial hypertension (9).
- **Absolute contraindication:** intracranial hypertension
- **Relative contraindications:** recent intracerebral hemorrhage, head trauma, untreated retinal detachment, severe glaucoma, recent myocardial infarction, unstable angina, unstable fractures

ECT initiation: titrate electrical current to seizure threshold or use "age-dose" method. Bitemporal electrode placement recommended; lorazepam may be paused 8–12 h before session. Post-ECT effects: headache, amnesia, nausea, vomiting, confusion, anesthesia-related effects (9,15). FDA recommendation: ECT in patients >13 years with refractory or severe catatonia, including malignant forms. Pediatric efficacy: 76–80% (9,10,12).
- **rTMS** treatment could, in some cases, serve as a therapeutic alternative to avoid long-term ECT.
- **tDCS:** noninvasive cortical stimulation using low-intensity direct current via scalp electrodes (15).

Management of Complications:-
Prevent and treat malnutrition, dehydration, and complications of immobility (thromboembolic, infections, joint issues) (1).

Conclusion:-
Management of catatonia has improved significantly, especially with brain stimulation techniques. Availability of suitable equipment, qualified personnel, and early intervention remain key factors determining prognosis (1,15).

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