

ECT in Catatonia: A Successful Synergy

Max Fink, M.D.

UK ECT Meeting

November 27, 2020

Conflicts of Interest: None

**Catatonia is an identifiable, verifiable,
treatable *systemic* motor syndrome**

Akin to epilepsy, delirium, melancholia

Usually acute in onset

Chronic, if inadequately treated

Does not leave residua with relief

Is Relieved by repeated GM seizures

The Story Begins: Catatonia is Recognized and Lost

1871: Hebephrenia described by Ewald Hecker (6 cases)

1874: Catatonia described by Karl Kahlbaum. (26 cases)

**1893: Both co-opted by Emil Kraepelin as part of his
imagined syndrome of dementia praecox.**

1910: Incorporated in Eugen Bleuler's schizophrenia

1952: DSM Catatonia only as schizophrenia type

**And remains so incorporated (buried, hidden) until
1994 (DSM-IV)**

Inducing Seizures in Humans?

1917: Nobelist Wagner-Jauregg offers fever therapy for neurosyphilis: the disease antagonism theory

1928-32: Ladislav Meduna finds decreased glia in schizophrenic brains and excess in epilepsy

1934: First chemical induction of seizures in “schizophrenic” patients

1937: Reports 50% remission rates in 110 patients

Of the first 11 “schizophrenic” patients selected by Meduna for trial, 9 were catatonic with 6 requiring tube-feeding !!

Catatonia Disappears

1930: Amytal Sodium effectively relieves stupor, mutism

1934: Chemically induced (Metrazole) seizures effective

1937: Electricity induced seizures are more efficient

1940s to 1980s: Catatonia disappears with effective treatments and its mis-classification (burial) within schizophrenia

Recovery: Which Pill for Which Patient?

- 1972 Guze & Robins develop Research Diagnostic Criteria at Washington U St Louis**
- 1973 Morrison- 10% patients met Catatonia criteria in Iowa 500 study**
- 1976 Abrams, Taylor- RDC Criteria: of 55 Catatonia cases, only 2 met SCZ, 2/3 met Mood Disorders criteria**
- 1977 Gelenberg- 7 cases Neurotoxic induced Catatonia**

NMS Shocks Psychopharmacology

- ***Syndrom malin* with haloperidol, Delay 1960**
- **A neurotoxic syndrome with fluphenazine, Meltzer 1973**
- **Catatonia neurotoxic syndrome, Gelenberg 1976**
- **Labeled 'NMS' by Caroff 1980**

Is NMS excessive dopamine blockade?

**Treatment with dopamine agonists
(bromocriptine, amantadine)**

**Because NMS muscle weakness ‘looks like’
Malignant Hyperthermia, dantrolene is
prescribed**

But, neither treatment is effective

(Benefits are due to neuroleptic withdrawal)

SBU Experience

1983: Three cases of NMS, one responded to nursing care, 2 to ECT within 48 hours.

1987: Fricchione refers Catatonia (Delir Mania) in Lupus: dramatically responds to ECT

1990: Full relief of “unknown stupor” when verified as catatonia on Neurology Service

1994: Toxic Serotonin Syndrome (TSS) treated as form of malignant catatonia

SBU Treatment Trials (1996)

Catatonia Rating Scale described.

**9% Catatonia in survey in Psych, ER and
Neurology units over 6 months**

**Lorazepam test applied (n=28); 80%
positive.**

**Lorazepam treatment applied; 76%
recover.**

ECT applied to remainder, all recovered

(ACTA 1996; 93(2):129-143)

Signs of Catatonia

- **Mutism, stupor**
- **Delirium, mania**
- **Negativism**
- **Posturing, staring**
- **Rigidity, waxy-flexibility**
- **Stereotypy, mannerisms**

The Many Faces of Catatonia

- **Retarded catatonia (Kahlbaum Syndrome)**
 - Benign stupors, Mutisms
- **Malignant catatonia) (MC)**
 - Neuroleptic Malignant Syndrome (NMS)
- **Delirious mania**
- **Self-Injurious Behavior in Autism**
- **Limbic encephalitis (NMDAR)**

Incidence of Catatonia Syndrome

Hospital Studies (by CRS)

Authors, <i>et al</i>, Year	# Patients	% Catatonia
Rosebush, 1990	140	9
Bush, Fink 1996	215	7
Peralta, 1997	567	3.5
Northoff, 1999	1259	2.7
Bräunig, 2000	297	12
Lee, 2000	160	15
Chalasani, 2005	298	12
Peralta, 2010	200	12

Effective ECT

Bilateral or BF electrodes

Half-Age formula dosing

EEG monitoring seizure quality

Vary frequency by severity, age, confusion;

Daily for febrile catatonia

Medication augmentation (BZD)

Flumazenil (BZD antagonist)

Continuation treatments to pre-illness status

The Lorazepam Challenge

Score Catatonia Rating Scale

Test: IV 2 mg lorazepam

If catatonia signs improve by 50%, test positive

Afebrile: Prescribe LRZ

Dosages are high-- 4-12 mg/day

Febrile: Bilateral ECT

– Daily seizures for 2-5 days

Avoid high potency antipsychotic drugs

Supportive Treatments for Catatonia

- **Treat Hyperthermia**
- **Reinstate fluid, electrolyte balance**
- **Protect excited patient**
- **Avoid antipsychotic drugs**
- **Minimize risks of immobility**

The DSM Wrestles with Catatonia

DSM-I, II, III: (1952,1968, 1980):

Schizophrenia, catatonic type (295.2)

DSM-IV (1994):

**Adds catatonia secondary to medical
condition (293.89)**

Keeps schizophrenia, catatonic type

DSM-5 (2013)

Schizophrenia, catatonic type deleted

Challenges to neuroscience

1. How do induced seizures change behavior?

2. What is mechanism of catatonia?

Neuroendocrine hypothesis (Relation to melancholia?)

Glial hypothesis?

Does persisting Fear sustain catatonia?

3. Relation of catatonia and melancholia?

The Catatonia Library

