

Change the MINDSET: a 30-year review of catatonia on the CL service

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ABSTRACT

Catatonia is a condition characterized by symptoms such as rigid body posture, echopraxia, echolalia, mutism, stupor, waxy flexibility, etc. Originally described in 1874 by Karl Kahlbaum, its description has been modified as our understanding has evolved. There are multiple etiologies of catatonia, and its cause is not completely understood. Some explanations include a dysfunction in dopaminergic function, while others indicate that dysfunction of gamma-aminobutyric acid and glutamate. This project aims to display medical causes of catatonia that have been identified by the research team and organize them into categories using the mnemonic MINDSET. One problem for consultation-liaison psychiatrists as most have not seen this many cases of catatonia due to general medical condition.

INTRODUCTION

Catatonia due to a general medical condition (CDGMC) is ascribed to a long list of medical illnesses, medications and toxins. CDGMC accounts for more than half of patients with catatonia in medical and surgical settings. Since catatonia may develop due to a medical condition and be complicated by them, determining the cause and delineating a treatment plan is essential for a swift resolution. As our understanding advances, CDGMC has provided clinicians and researchers greater understanding of the anatomical and functional circuits and neurochemical mechanisms contributing to catatonia. Treatment plans typically include lorazepam, zolpidem or ECT. However, a different diagnostic and treatment approach is necessary for patients with CDGMC as the underlying cause needs to be addressed. It is important to physicians in consultation-liaison psychiatry, nurses, psychologists, social workers and case managers to be able to recognize catatonia secondary to medical cause. Failure to recognize catatonia will delay treatment, increase risk of complications and may lead to treatment resistance.

METHODS

Catatonia due to general medical conditions may include a variety of causes. Oldham (2018) used the Mnemonic of MINDSET (miscellaneous, infectious, neurodegenerative, developmental, space-occupying lesion, epilepsy, toxins) to classify ascribed etiologies including developmental disorders. We recommend the MINDSET mnemonic to help classify cases of catatonia due to a general medical condition and further study CDGMC. Advantages of MINDSET include: multiple etiologies, exacerbating conditions in patients with primary psychiatric illnesses, pre-existing conditions before the development of catatonia, toxins such as medications, illicit substances, alcohol and drug withdrawal. We sought cases that we had presented or published. They were stratified into MINDSET; examples include etiologies such as renal failure, Creutzfeldt-Jacob Disease, Binswanger's Disease, Huntington's Disease and hydrocephalus.

LITERATURE REVIEW

The index author (BTC) reviewed the literature in 2013
Carroll BT, Mendenhall B, Appiani F, Speigel D, McDaniel W. Catatonia due to a general medical condition (Organic Catatonia) Current Psychiatry Reviews. 9 (2);106-110, 2013 in 2004 for a book chapter (reference) and in 1994.
Carroll BT, Anfinson TJ, Kennedy JC, Yendrek R, Boutros M, Bilon A. Catatonic Disorder Due to General Medical Conditions. The Journal of Neuropsychiatry and Clinical Neurosciences 6:122-133, 1994
The research group agrees that the 2018 publication by Oldham is authoritative.
Oldham M. The Probability That Catatonia in the Hospital has a Medical Cause and the Relative Proportions of Its Causes: A Systematic Review. Psychosomatics 59(4):333-340, 2018
Thus, we have used our own experience, our own cases and place it under the MINDSET classification.

MINDSET

Total	26
M	2
I	2
N	5
D	2
S	3
E	1
T	11

Miscellaneous	<ul style="list-style-type: none"> • Hyponatremia • Renal failure
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Infectious	<ul style="list-style-type: none"> • Encephalitis • Creutzfeldt-Jacob Disease
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Neurodegenerative	<ul style="list-style-type: none"> • Thalamic degeneration • Neurodegenerative disorder • Binswanger's Disease • Huntington's Disease • Cerebrovascular Disease
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Developmental	<ul style="list-style-type: none"> • Heller's Syndrome • Tay Sachs Disease
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Space Occupying Lesion	<ul style="list-style-type: none"> • Hydrocephalus (2x) • Progressive Multifocal Leukoencephalopathy
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Epilepsy	<ul style="list-style-type: none"> • Ictal catatonia
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Toxins	<ul style="list-style-type: none"> • Neuroleptic induced (2x) • Methamphetamine (3x) • Meprobamate, sedative withdrawal • Synthetic cannabinoid • Baclofen intoxication • Corticosteroid • Carbamazepine withdrawal • Unknown, with delirium
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An annotated table with specific citations is available on request

RESULTS

This retrospective was from the index clinician (BTC) from 1992 to 2022. We include 17 publications, five presentations, two new cases and two consultations. We identified 26 cases over 30 years by the index clinician (BTC). In a recent presentation 4 patients out of 6 on the C-L Service met criteria for CDGMC. These cases were assessed and collected in 2023 and are not included in the Table. Nonetheless, the MINDSET classification has been applied in these publications and oral presentations since 2018. The monograph of the catatonia consult liaison service is available upon request.

DISCUSSION

Throughout the history of catatonia, there has been an effort to classify catatonia due to a general medical condition. The first effort to attempt to do this in North America began in 1994, with the DSM-IV when this disorder was added. Since then, more conditions have been ascribed to catatonia due to a general medical condition. The list became longer and the classification became more challenging. However, Oldham (2018) was able to set up a classification and Mnemonic to capture all of these causes.

MINDSET was able to incorporate new causes as they were described. In our clinical practices, we have found methamphetamine to be associated with catatonia. We recently presented posters/abstracts that allow us to describe new cases and add them to MINDSET.

We need a way to incorporate these causes into the literature on CDGMC and we recommend that MINDSET is the way to do it. The list of CDGMC is never complete. New causes are added to the medical literature each year. If all causes are listed individually, then the list becomes too long. MINDSET, is a set of seven categories, not a finite set of etiologies. It avoids the problem of listing all causes and associations. It also can help to identify more likely etiologies. For instance, encephalitis is much more likely to cause catatonia than organophosphates. It can help the C-L Psychiatrist to identify likely etiologies. In our clinical practices, methamphetamine is much more likely to cause CDGMC than developmental disorders (e.g. Tay-Sachs disease).

CONCLUSION

Patients in acute medical and surgical settings who presents with catatonia deserve a medical work-up that will prioritize its etiologies. CDGMC may comprise up to 50% of cases of catatonia. While the frequency for the C-L clinician may be low, there is a greater need for screening, diagnosis and detection of CDGMC. There is a need for more research into CDGMC using the MINDSET Stratification. The 4 C's of the treatment of catatonia due to a general medical condition include treatment directed at Catatonia, Treatment directed at Comorbid conditions, Treatment directed at the medical Cause and Treatment directed at the Complications of catatonia. This was the recommendation from the 2013 review:

Carroll BT, Mendenhall B, Appiani F, Speigel D, McDaniel W. Catatonia due to a general medical condition (Organic Catatonia) Current Psychiatry Reviews. 9 (2);106-110, 2013

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