Wednesday, 10:00 – 11:30, D3

What Exactly is Catatonia in Persons with Autism Spectrum Disorder

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Objectives:

1. Identify effective methods for the practical application of concepts related to improving the delivery of services for persons with developmental disabilities
2. Identify advances in clinical assessment and management of selected healthcare issues related to persons with developmental disabilities
3. Develop an algorithmic approach to catatonia that matches with current understanding of this heterogeneous condition

Notes:

Catatonia and Autism Spectrum Disorders

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Autism Spectrum Disorder

- ASD is a complex developmental disorder associated with problems in neuronal migration, maturation, interactive specialization, synaptic stability and activity, synaptic pruning, intra/inter-cortical communication via cortical tract formation.
- ASD affects multiple pathways involved in the hierarchical processing of multi-modal sensory input; integration, organization and adapting output functions, set shifting and motivation

ASD- Core Features

- 70% of those with ASD have ID, severity of ID and ASD interrelated, SZDO/EEG abnormalities
- Adaptive functions are generally more impaired relative to cognitive functions
- Three super families: relatedness to other autosomal neurodevelopmental syndromes; polygenic form related to a broader phenotype; disintegrative/late regressive

ASD- Core Features

- Social relatedness and skill development, impairments in fundamental social/emotional networks noted in infancy
- Communication impairments ranging from nonverbal with limited interest in communication; socially inept with deficits in pragmatics
- Restrictive and repetitive behaviors- ranging from tic disorder and motor stereotypies to fixed ideas and OC spectrum disorder, persveration

Neuropsychiatry of ASD

- Social network- fronto-limbic linkages gaze, face processing, memory circuitry and coherence between TPO related brain activity
- Relationship to Tourette's disorder and other deficits in the greater amygdala, limbic-basal ganglia, fronto-temporal disconnection
- Increased rates of anxiety/mood disorders
- Social and language motivational deficits

Genetics of ASD

- Polygenic pattern of inheritance- expanded phenotype, aberrant brain development, gene activation during specialization
- Generalized imbalance between excitatory-inhibitory circuitry- glutamate/GABA, VGK/na/Ca channels; MeCP2-BDNF; neuro-immune activation
- Current research into 15q 11.2-13 duplication and inverted duplication- overlap PD, epilepsy, mitochondrial dysfunction, ubquinone/GABAa receptors

ASD: Neuropsychiatric Comorbidities

- Intellectual disability is present in most (70%) and shapes symptomatology and risk for symptomatic or secondary autisms
- Seizure disorders more common with DD
- Mood disorders, including a suggested links link between Asperger's and bipolar disorder
- Multiplex/ASD- affective, cognitive, behavioral instability, VCFS and psychosis

Catatonia

- Complex neuropsychiatric disorder, multidimensional etiology
- Core symptoms: immobility, de-/increased speech output, stupor >1 day; and one of the following: catalepsy, automatic obedience, posturing
- Criteria B: bradykinesia, akinesia/abulia; imitation/environmental dependency, freezing, stereotypies and movement disorders

Etiology- Catatonia

NMS, related hypermetabolic disorders	Nonconvulsive status, SCN1a syndrome	Elective mutism
Akinetic mutism	Movement disorders- PD, on-off phenomona, Complex tics	Severe mood/anxiety disorder
Locked in syndrome	CVA- biparietal, bifrontal, ant cerebral artery	Substance Abuse withdrawal, Wernicke's
Stiff persons (GAD-25 antibodies	Delirium – multiple etiologies, PCP/ketamine	Physical/sexual abuse- freezing reaction, startle, autonomic hyperactivity
VGKC, nmda/ampa-r neuronal antibodies	End stage dementias, tau, synucleopathies, TDP 43	ASD- 10-17% prevalence rates, passive subtype

ASD-Catatonia: Common Ground

- Vulnerability to EPS (pharmacokinetic vulnerability), VGCa and other channelopathies, epilepsy
- Common anti-neuronal AB syndromes in regressive forms of ASD (Childhood disintegrative disorder
- PD-like in 15 q duplication group, tic disorders/ D8/17 plasma markers
- Mood and anxiety disorders; delirium

Treatment

- Requires a careful, focused assessment and differential diagnosis
- Not schizophrenia, affective illness-more likely
- NMS is a rule out, especially with symptom exacerbation by over zealous APD use.
- Benzodiazepine (GABA agonists); NMDA antagonists, opiate antagonists, mood stabilizers, ECT, ? TMS

Conclusions

- Both catatonia and ASD represent overlapping final common pathway disorders
- Genetic risks- disruptions in excit/inhibitory balance, 15q 11.2-13 duplication
- Acquired forms- subgroup of hypermetabolic disorders (NMS, MH, anti-neuronal AB, Wernicke's), low threshold for APDs EPS,
- ASD is a developmental risk factor for catatonia