

The DISCUS and
Tardive
Dyskinesia

Arden Gregory RN, PhD, CDDN

1

Course Objectives

- Student will be able to:
 - define Tardive Dyskinesia (TD).
 - be aware of similar conditions and symptoms.
 - name the causes of TD
 - list TD risk factors
 - learn to use the DISCUS

2

Tardive Dyskinesia (TD)

- Tardive: *Tardif* (French) = tardy or late; from *Tard* (Latin) = slow
- Tardive tell from acute dyskinesias
- Dyskinesia: *dys* = difficult
 - Kine* = movement (Greek)
 - Sis* = condition of/presence (Latin)

3

TD defined ⁽¹⁾

- Appears some time after causative agent/condition
- Involuntary movement of tongue, lips, face, trunk & extremities
- Involuntary movement can vary from rapid blinking to uncontrollable movement

4

TD defined ⁽²⁾

- Concurrent with abnormal involuntary movement are problems in performing/ coordinating voluntary movement

5

Other Conditions/Symptoms ⁽¹⁾

- Dystonia: involuntary, sustained skeletal muscle contraction → repetitive twisting movement or abnormal posture
- Akathesia: restlessness
- Parkinsonism: inability to mitigate fine muscle movement (lack of inhibition)

6

Other Conditions/Symptoms (2)

- Athetoid: slow writhing, involuntary movements of flexion, extension, pronation, & supination
- Myokymic: continuous involuntary quivering or muscle rippling at rest
- Retrocollis: drawing back of head

7

Other Conditions/Symptoms (3)

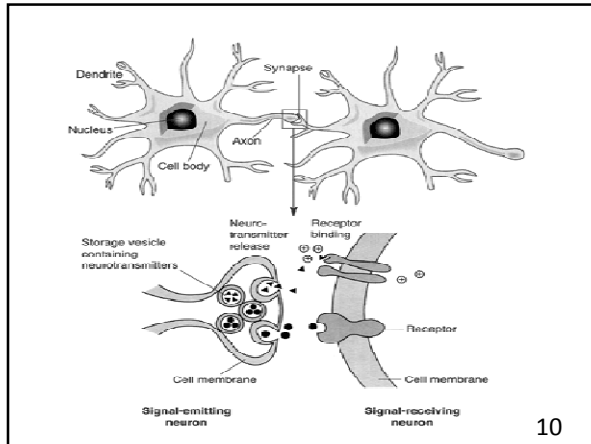
- Torticollis: neck contraction with head drawn to one side & usually rotated to point chin to the other side
- Chorea: irregular, spasmodic, involuntary facial or limb movement

8

TD Pathophysiology

- Not completely understood
- Extraparamidal Symptom
- Theory: Damage to systems that use & process DOPAMINE, a brain neurotransmitter that regulates emotion, cognition & movement.

9



TD & Dopamine

- Psychotropic medications, prescribed for schizophrenia, are “Dopamine-Receptor Antagonists” (DRA). Dopamine:
- Derived from tyrosine.
- Release mediated by serotonin .
- Regulates affect, cognition, movement

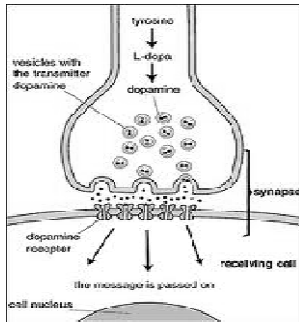
11

Dopamine Function

- Affect – dopamine is part of the brain pleasure system → feelings of enjoyment & reinforcement to motivate continuation of enjoyable activity
- Cognition – controls flow of information to brain frontal lobes.
- Locomotion – crucial part of basal ganglia motor loop permitting smooth, controlled movement. (Dopamine is inhibitory)

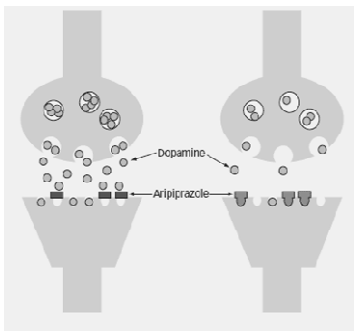
12

Dopamine Neurotransmission



13

Dopamine Receptor Antagonism



14

Etiology - 1st Gen. Antipsychotics

- Phenothiazines: Thorazine, Prolixin, Serentil, Trilafon, Mellaril, Stelazine
- Butyrophenones: Haldol, Loxitane
- Thioxanthenes: Navane
- Diphenylbutylpiperidine: Orap.

15

Etiology - 2nd Gen. Antipsychotics ⁽¹⁾

- Clozapine [Clozaril] ☆ - 1990
(agranulocytosis; weekly monitoring)
- Risperidone [Risperdal] 1994
- Olanzapine [Zyprexa] ☆ 1996
- Quetiapine [Seroquel] ☆ 1998

16

Etiology - 2nd Gen. Antipsychotics ⁽²⁾

- Ziprasidone [Geodon] 2001
- Arpiprazol [Abilify] 2002
- Paliperidone [Invega] 2009
- Asenapine [Saphris] 2009
- Iloperidone [Fanapt] 2009
- Lurazidone [Latuda] 2010

17

Etiology – Non-antipsychotics ⁽³⁾

- Anticholinergics: Benzhexol, Biperiden, Norflex, Procyclidine
- Antidepressants: Nardil, Prozac, Zoloft, Desyrel, Elavil, Triavil, Asendin, Sinequan, Tofranil
- Antiemetics: Reglan, Compazine
- Antiepileptics: Tegretol, Zarontin, Phenobarbital, Dilantin

18

Etiology – Non-antipsychotics

- Antihistamines
- Antimalarial: Chloroquine
- Anti-Parkinson: Parlodel, Atamet, Sinemet
- Anxiolytics: Xanax
- Biogenic amines: Dopamine [Intropin]
- Mood stabilizers: Lithium
- Oral contraceptives: Estrogens
- Stimulants: Amphetamine, Ritalin, Caffeine

19

Risk Factors

- 15-30% receiving DRAs develop TD
- Elderly
- Females
- Post-menopause
- Prior acute movement disorders
- Fetal Alcohol Syndrome
- Some brain disorders
- Intellectual Disability
- Diabetes
- Concurrent general medical disease
- Drug induced Parkinsonism

20

Diagnosis

- History: Neuropsychiatric & medication history most relevant
- Physical examination (including DISCUS or AIMS)
- Objective: rule out causative conditions or agents

21

Treatment

- No treatment consistently worked
- Primary aim: prevention
 - Search for effective non-DRA Tx
 - Limit DRA dose – best cost/benefit
 - Frequent assessment (q3 – 6 months) for TD with DRAs

22

DISCUS

- Dyskinesia Identification System:
Condensed User Scale
- Assesses dyskinesic movement – not diagnostic
- Other Scales:
 - TDRS: TD Rating Scale (shorted DISCUS)
 - AIMS: Abnormal Involuntary Movement Scales
 - Others

23

DISCUS Sections

- 1: List of current psychotropic meds
- 2: Examine “type”
- 3: Individual Cooperation
- 4: Scoring Instructions (0 – 4 & NA) ☆
- 5: Assessment ☆
- 6: Comments
- 7: Evaluation

24

DISCUS ASSESSMENT ⁽¹⁾

- FACE – Tics & Grimaces
- EYES – Blinking (bursts of)
- ORAL – Chewing/Lip Smacking
- Pucking/Sucking/thrusting Lower Lip
- LINGUAL
 - Tongue thrusting/in cheek
 - Tonic Tongue
 - Tongue Tremor
 - Athetoid/Myokymic/Lateral Tongue

25

DISCUS ASSESSMENT ⁽²⁾

- HEAD/NECK/TRUNK
 - Retrocollis/Torticollis
 - Shoulder/Hip Torsion
- UPPER LIMB
 - Athetoid/Myokymic Finger-Wrist-Arm
 - Pill Rolling
- LOWER LIMB
 - Ankle Flexion/Foot Tapping
 - Toe Movement

26

DISCUS Scoring Errors ⁽¹⁾

- Inappropriately counting tremor
- Confusing mannerism & stereotypies with true abnormal movements
- Forcing a movement

27

DISCUS Scoring Errors ⁽²⁾

- To prevent confusing mannerisms & stereotypies with abnormal movement:
Occurs
 - in one body position & no other time. Have person change position
 - with another behavior & at no other time
 - with identifiable antecedent & at no other time

28

Scoring Features

- Presence
- Frequency
- Ease of Detection

29

DISCUS Scoring ⁽¹⁾

- 0 – **NOT PRESENT** (movements not observed or some movement observed but not considered abnormal)
- 1 – **MINIMAL** (abnormal movements are difficult to detect **or** movements are easy to detect but occur only once or twice in a short non-repetitive manner)
- 2 – **MILD** (abnormal movements occur infrequently **and** are easy to detect)

30

DISCUS Scoring ⁽²⁾

- 3 – **MODERATE** (abnormal movements occur frequently **and** are easy to detect)
- 4 – **SEVERE** (abnormal movements occur almost continuously **and** are easy to detect)
- NA – **NOT ASSESSED** (assessment for an item cannot to be made)

31

DISCUS Use Prerequisites

- A history of at least 3 months total cumulative antipsychotic medication exposure or
- A total previous DISCUS score of 5 or above or
- Other conditions that are not responsible for the abnormal involuntary movement

32

DISCUS HINTS (before/during test) ⁽¹⁾

- Check for gum or food
- Model exam steps
- DO NOT say "ahhh"
- Adapt exam to individual
- Never force a step; skip as necessary
- If individual cannot/will not do steps, just observe
- Activation tasks are to elicit movement

33

DISCUS HINTS (before/during test) (2)

- Do not stare at any involved area; take an entire body inventory
- Don't have individual stand barefoot on cold floor
- Do not assess feet initially
- Provide privacy
- Take your time, typical exam = 5 to 10"
- Practice, PRACTICE, PRACTICE

34

DVD 1

35

DISCUS steps (1)

- Explain examination purpose
- Have individual stand and
 - Extend arms horizontally forward for 10 sec.
 - Give cognitive activation task
 - Lower arms.
 - Repeat
- Open mouth wide for 10 sec. Repeat.
- Stick out tongue for 10 sec. Repeat

36

DISCUS test steps (2)

- Have individual remove shoes & socks
- While sitting:
 - Raise right arm & touch thumb to fingers rapidly for 10 seconds
 - Repeat with left arm.
 - Repeat with both arms
- Have individual write name, draw picture
- Open mouth for 10 seconds. Repeat
- Stick out tongue for 10 sec. Repeat

37

DISCUS test steps (3)

- Put shoes and socks back on
- Have individual stand. While standing:
 - Hold the arms forward horizontally
 - Ask for a cognitive activation task
 - Lower the arms
 - Repeat

38

CASES

DVD 2

39

STATE REQUIREMENTS

- Administrative Rule 115.240 d) states: Screening for and documentation of abnormal involuntary movements, including tardive dyskinesia, in individuals receiving prescribed psychotropics shall be completed at least every six months by employees trained in performing this type of assessment.

40

Closing

- TD ↓ with 2nd generation anti-psychotics, but are not gone.
- 2nd generation antipsychotics with a ↓ TD incidence have metabolic syndrome (diabetes, weight gain and ↑ lipids).

41
