

Medications and the I/DD Population

A Supplemental Document to Session 4 in Webinar Series

ADR Symptoms that Mimic Age Related/Associated Changes and Diseases

Biological Changes	<ul style="list-style-type: none">• Impaired senses• Cardiovascular functioning• Incontinence or retention• Increased or decreased appetite• Constipation or diarrhea• Skin - rashes, itching• Dryness of mouth• Stomach – nausea• Male impotence• Dehydration
Behavior Changes (dementia symptoms mimic these)	<ul style="list-style-type: none">• Acute dementia• Agitation/excitable/restlessness/wandering• Anxiety• Behavioral changes (euphoria)• Cognitive function decline• Communication skills decline• Confusion• Disorientation to person, place or time• Disturbed concentration• Depression, sadness, irritability• Delusion/hallucinations (auditory/visual)• Increased or decreased sleep• Loss of interest• Memory loss (short and long term)• Personality change
Neurological Changes	<ul style="list-style-type: none">• Black-out spells• Coma• Dizziness• Headache• High fever/elevated body temperature• Numbness• Tingling
Muscle Coordination	<ul style="list-style-type: none">• Convulsion• Decreased or loss of muscle coordination• Falls/uncoordinated movement• Tremors/twitches• Restlessness• Seizures• Unsteady gait

Examples of Elements in Developing a Protocol on Identification and Reporting Observed Changes

Staff	Key changes	Why changes	When to assess
<p>Nursing</p> <p>Therapists</p> <p>Aides</p> <p>Family</p> <p>Staff</p> <p>Individual</p>	<p>Biological</p> <p>CNS</p> <p>Behavior</p> <p>Motor/ movement</p>	<p>No. of Medications</p> <p>Types of Medications</p> <p>Dose/aging</p> <p>Environment</p> <p>Biological change</p> <p>Social factors</p> <p>Illness</p>	<p>Sudden Changes (1-2 weeks)</p> <p>New Patient (within 1 month)</p> <p>Change in regime (dose new or DC administration)</p>

Case Study

This case study is based on an older ID/DD adult. It illustrates how ADRs associated with medications may mimic, mask, exacerbate or cause ACSC that places them at risk for hospitalization. Remember that severe and profound ID/DD individuals also may express ADR-related behavior that may be subtle.

Case History

A male adult (71) with mild ID (Down's syndrome) has been diagnosed with senile dementia. He is confused and is apathetic to the environment around him - he refuses to participate in any activities. He is taking medications for hypothyroidism, ulcer and seizures. Recently he was placed on a medication to help increase his cognitive function and memory. Two weeks after he was started on this medication you noticed some changes from his normal behavior and from his prior symptoms of dementia.

He appears to be more: confused, tired, lethargic/apathetic, and has problems sleeping, resulting in many short naps. He also appears to have loss his appetite along with black out spells and small muscle tremors.

Medications

- Rivastigmine (Exelon) - (dementia memory)
- Levothyroxine (Synthroid)- (hypothyroidism)
- Ranitidine (Zantac) - (heart burn)
- Levetiracetam (Keppra)- (anticonvulsant)

Known Medication Adverse Drug Reactions

Exelon (rivastigmine)

Use: Increase memory in AD individuals

Common Side Effects	Mental	<ul style="list-style-type: none">• Confusion• Hallucinations• Insomnia
	CNS	<ul style="list-style-type: none">• Tremors
	Biology - GI	<ul style="list-style-type: none">• Nausea• Anorexia• Constipation• Cramps
	Biology – Urinary	<ul style="list-style-type: none">• Infections
At Risk	GI	<ul style="list-style-type: none">• Vomiting

Zantac (ranitidine)

Use: Acid reflux (reduces gastric acid)

Common Side Effects	Mental	<ul style="list-style-type: none"> • Sleeplessness • Lethargic/apathetic • Hallucinations
	CNS	<ul style="list-style-type: none"> • Headaches
	Biology - GI	<ul style="list-style-type: none"> • Constipation
	Biology – CV	<ul style="list-style-type: none"> • Tachycardia
	Biology - EENT	<ul style="list-style-type: none"> • Blurred Vision
At Risk	None	

Keppra (levetiracetam)

Use: Reduce Seizures

Common Side Effects	Mental	<ul style="list-style-type: none"> • Sleepy • Dizziness
	CNS	<ul style="list-style-type: none"> • Headaches
At Risk	Mental	<ul style="list-style-type: none"> • Suicidal Ideation

Process to Determine if Changes Experienced Are Due to ADRs

Below are screenshots from a web-based software screening program called EMAS (Electronic Medication Alert System).

The eMedication Alert System's (eMAS) algorithm is a software web-based program that matches any changes observed in an older adult to their medications having similar adverse drug reactions. The eMAS generates a record of all medications that match the individual's observed changes.

Patient Details and Medical Providers

- This is the screen with the patient and all those who will receive the record

Patient Details

Enter/Select Patient, By Name: Search Add
(Last, First, Middle, Salutation)

Patient Information Edit

Patient: PA-712 Name: Mr. John Johns (DS) eMail:
 Stats: Age: Gender: Dob:

Medical Providers

Enter/Select Nurse By Name: Add

(Last, First, Middle, Salutation)

- x Nurse: Name: Mr. Ronald Lucchino, eMail: rvluc@comcast.net Primary Provider
- x Medical Doctor: Name: Dr. Mark Jones, eMail: mjones@gmail.com Primary Provider
- x Pharmacist: Name: Mr. James Hogg, eMail: rvluc@hotmail.com Primary Provider
- x Unit Managers: Name: Mr. Ed1, eMail: edsanford@odiconsulting.com Primary Provider

Observed Changes

- This is the screen showing all the observed changes added from the drop-down menu along with the dates the information was added

PATIENT OBSERVATIONS MEDS MATCH SAVE

Observations/ ADRs

Assessments for: Mr. John Johns (DS) Entered by: Mr. Ronald Lucchino On: 02/27/2013

Select Category: --Choose Category-- Select Observation: Identified: 02/27/2013

Category:	Observed Reaction:	Date identified:	Status:
Behavior	Confusion	06/01/2012	Active
Behavior	Fatigue	06/01/2012	Active
Behavior	Uncooperative	06/01/2012	Active
Digestive	Increase or decrease appetite	06/01/2012	Active
nervous	Black out spells	06/01/2012	Active
nervous	Tremors	06/01/2012	Active
Sleep	Excess sleep at night	06/01/2012	Active

Medications

- This is the screen with the medications added – drug names are added from the drop-down menu
- When medications are added, the match link is used to quickly assess which medications may be causing the observed changes

Medications Taken

Medications for: Mr. bob jones Summary Detail

NEW:

Drug Name:

NDC#:

Prescribed By: On: 05/21/2013

More: Dosage: Frequency: Purpose:


Drug	Purpose	Prescribed By	On	Status
(-) Rivastigmine			04/30/2013	Active
(-) Levothyroxine			04/30/2013	Active
(-) Ranitidine			04/30/2013	Active
(-) Levetiracetam			04/30/2013	Active


Match Screen

- This is the match screen showing which observed changes may be an ADR with the associated medication that may be causing it

PATIENT OBSERVATIONS MEDS **MATCH** SAVE





Assessment for: bob jones
 Created by: Mr. Ronald Lucchino
 Created On: 05/21/2013
 Match ID#: D213K4630

 **Match Identified - At Risk or ACBS matches located.**
 Follow-up Recommended

Auto Notifications (*Select Recipients*): SEND 

SUMMARY:

Match identified 4 medications with ADRs (Adverse Drug Reactions). Of those ADRs 3 where Severe. 1 medication was identified by the ACBS List and likely have Anticholinergic Effects (not recommended for the elderly). A follow-up with your medical practitioner for possible change(s) in drug regime is recommended.

Observed Reaction	Drugs with Associated ADRs 	Severity 	Match 
Confusion	Levetiracetam, Levothyroxine, Ranitidine, Rivastigmine	Compounding (Severe)	4
Increase or decrease appetite	Levothyroxine, Rivastigmine	Severe	2
Tremors	Levothyroxine	Severe	1
ACBS List: 	Ranitidine		

- Confusion has 4 medications who associated ADRs may be causing this change, this is the same for the other two symptoms
- ACBS (anticholinergic cognitive burden scale) in an alert denoting that this medication has serious ADR implications in older adults (note that one medication falls into this category)
- This is the record that could be sent to the doctor, pharmacist, or nurse

Additional Resources

- Medication Alert System:
www.medicationalertsystem.com
- Anticholinergic Cognitive Burden Scale:
<http://www.indydiscoverynetwork.org/AnticholinergicCognitiveBurdenScale.html>