



Challenging Behavior and Psychotropic Medication: Evidence-Based Practices

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Evaluating Behavioral Effects of Psychotropic Medication

- Estimate that between 20% to 45% of people with ID are taking psychotropic medication
- 14% – 30% are taking these meds to control challenging behavior
 - Aggression, self-injury, disruptive behavior, stereotypy, temper tantrums, property destruction
 - 27% taking multiple medications
- Up to 36% of people with ID in residential settings are prescribed meds in absence of psychiatric diagnosis

Individuals with ID

Diagnosing psychiatric disorders in individuals with ID is improving
Using same medications with people with ID as those prescribed for people without ID (i.e., off label)
But do people with ID respond in the same way as people without disabilities?

Effects of Medications on People with ID

Use of smaller doses – more sensitive to behavioral effects
More sensitive to side effects
People with ID have more medical issues at outset
This is based primarily on clinical experience rather than clinical trials

Randomized Clinical Trials – Best Practices

Double blind
Placebo controlled
Use multiple, standardized doses
Evaluation of dependent variable using well-validated instruments
Random assignment of participants
Appropriate statistical analysis
Sprague and Werry, 1971

Additional Important Criteria

Keep all other interventions constant
Watch for placebo or honeymoon effects (either for caregiver or person with ID)
Ideal is to evaluate separate and combined effects of medication and behavioral interventions
Use direct observation measures
Obtain measure of social validity and consumer satisfaction

Napolitano et al., 1999

Evidence-based Practices in Evaluating Medication Effects

Randomized Clinical Trials are ideal, but

- Expensive
- Time consuming
- Unavailable to average practitioner

What key elements can we use and still be able to draw conclusions regarding efficacy of the medication?

Guidelines for Conducting Medication Evaluations

Collect data from a variety of sources

- Biological information
- Behavioral rating scales
- Direct observation data

Try to keep an observer blind
One intervention at a time (if you can't, at a minimum document changes)

Slide 8

b4 Add citation of our JIDR paper?
david, 10/12/2008

Biological Measures

Source of objective data
Blood levels (therapeutic effects)
Help monitor health status
Side effects (e.g., agranulocytosis)
Future directions of biomedical information:
-Neuroimaging
-Neuroendocrine measures (e.g., GABA, serotonin)
-Gene analysis

Pharmacogenetics

Involves evaluating an individual's rates of absorption, drug metabolism, and medication clearance

These rates differ from person to person and are based on individual's genetics

For example, at one dose of risperidone, an individual with CYP2D6 polymorphism "X" efficiently metabolizes the medication, while an individual with CYP2D6 polymorphism "Y" poorly metabolizes the medication.

Behavioral Rating Scales

Clinical trial research relies primarily on the use of an objective rating scale or questionnaire at regular intervals to evaluate medication efficacy

Completed by a parent, teacher, or carer that knows the individual well

Growing use of self-report scales

Likert-type scales



Aberrant Behavior Checklist

Well normed on adults and children with ID in a variety of settings (Community version)

58-items to rate the severity of behavior on a scale of 0 (not a problem) to 3 (a severe problem)

Five subscales:

- Irritability
- Social Withdrawal/lethargy
- Stereotypy
- Hyperactivity
- Inappropriate speech



Clinical Global Impression Scale

Administered by a trained professional (usually a physician or nurse)

Used to evaluate medication effects in both children and adults with ID

The most widely used measure of medication efficacy with individuals with ID and psychiatric populations

Problems with scale

- Too global
- Not topography specific
- Lack of specificity of effects



Screening or Diagnostic Rating Scales

Diagnostic Assessment for the Severely Handicapped (Second edition)

The Child Behavior Checklist

Developmental Behavior Checklist

Reiss Screen for Maladaptive Behavior

Psychiatric Assessment Schedule for Adults with Developmental Disability (PAS-ADD)



Rating Scales for Specific Disorders

Yale-Brown Obsessive-Compulsive Scale
(Y-BOCS)

Compulsive Behavior Checklist

Glasgow Depression Inventory

Mental Retardation Depression Scale

Child Depression Inventory

Intellectual Disability Mood Scale



Advantages and Disadvantages

Can gather a lot of info quickly (cheap, easy)

Can be used across a variety of setting and informants

Allow for measures of changes in the intensity of behavior

Provide a degree of social validity

BUT, subject to recency effects

can lack interrater agreement



Direct Observation Measures

Allows for even more objective and quantifiable information for decision making

Individualized

Can be for brief window of time or across day/settings

Several methods

- pre-specified checklist of behavior
- frequency or interval data (scatterplot)
- duration data
- narrative accounts less useful

Direct Observation Data

Can look at both positive and challenging behavior

Not widely used in most clinical trials

Exception: RCT of children with ADHD

- Off-task behavior
- Classroom disruption
- Academic performance

Rapidly growing in autism research, particularly studies with risperidone and other antipsychotics

Our current study of atomoxetine (Strattera)

Use of Functional Analysis during Medication Evaluations

Schaal & Hackenberg (1994) first suggested use of FA during medication treatment

Shouldn't base prescribing practice on topography alone

Several case studies have demonstrated use of FA during drug trial

- Fisher, Piazza & Page (1989)
- Cooper et al., 1993
- DiCesare, McAdam, Toner, & Varrell (2005)

Results: able to evaluate effectiveness of medication under different reinforcement conditions

Functional Analysis Research

Functional analysis during double-blind placebo controlled clinical trial

- Northup et al. (1997, 1999)
 - MPH with kids with ADHD
 - Differential effects in one or more FA condition
 - Differential treatment effects (TO and reprimand)
- Garcia & Smith (1999)
 - naltrexone tx in two adults with SIB
 - NTX reduced one topography of SIB but not the other under certain conditions (function- and topography-specific effects)



Functional Analysis during Risperidone Treatment

Purpose of the study was to conduct a functional analysis concurrent with a double-blind, placebo-controlled trial of the atypical antipsychotic risperidone

Goal: to determine how environmental variables are modified by medication

May allow us to identify predictors of medication response



Experimental Design

- Baseline/Drug Washout (4 weeks)
- First Placebo Phase (3, 4, or 5 weeks)
- Low Dose (6 weeks)
 - 1 mg/day (children) or 2 mg/day (adults)
- High Dose (6 weeks)
 - 0.05 mg/kg/day
- Second Placebo Phase (3, 4, or 5 weeks)
- Unblinded Maintenance Phase (6 months)



Clinical Evaluation Measures

Behavior Rating Scales

Aberrant Behavior Checklist-Community (ABC-C)

Irritability subscale

Clinical Global Impressions (CGI)

Side Effects Measures

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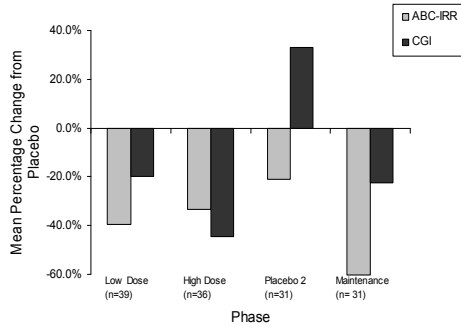
Neuroleptic Side Effects Questionnaire

Results of Clinical Trial

52 participants enrolled in risperidone trial
 - 40 completed
 - 27 (67.5%) "Responders" to the medication (as measured by improvement on the ABC-C)

Zarcone et al. (2001); Hellings et al. (2006).

Rating Scales



Clinical Trial Results, cont

Primary side effects:
 -sedation,
 -increased appetite/weight gain
 (Hellings et al., 2001)
 -Increased prolactin levels
 (Hellings et al., 2006)

Functional Analysis Component

21 participants enrolled

- 4 dropped out
 - 3 dropped med trial, 1 dropped FA only
- **17 completed**
- 12 (71%) were responders to the medication

Zarcone et al. (2004)

Demographics - Functional Analysis Participants (N = 17)

Gender:

- male - 11 female - 6

Age:

- children - 8 adults - 9

Level of functioning:

- mild - 3 moderate - 3
- severe - 4 profound - 7

Diagnosis: autism/PDD - 13

Functional Analysis Sessions

Sessions conducted at home/school/work
Once per week throughout med trial
Multielement experimental design

Conditions:

- Demand - Attention
- Tangible - Ignore
- Play/leisure (control)

Findings

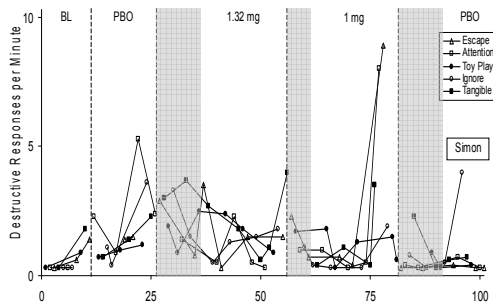
No challenging behavior observed (N=4)

- Families observed improvements in mild problem behavior

No effect of the medication (N=3)

Example Participant - Simon

- 13-year-old diagnosed with Down syndrome and profound MR
- primary target behavior: self-injury

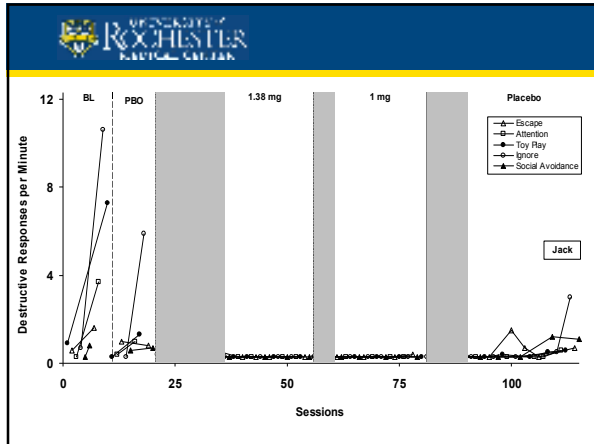


Findings, continued

Undifferentiated FA with a general suppression of behavior (N=5)

Example participant - Jack

- 16-year-old diagnosed with intermittent explosive disorder and profound MR
- primary target behaviors: aggression, face slapping, property destruction, stereotypy



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Findings, cont.

Differential effect of risperidone on escape behavior (N=4)

- Two participants had escape behavior only
- Two participants had behavior maintained by escape + positive reinforcement

=> risperidone only affected the escape behavior

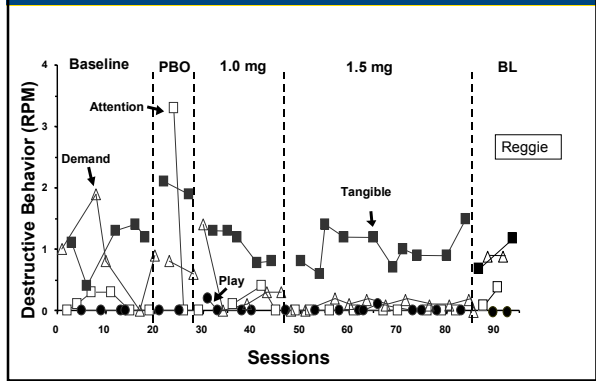
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Findings, continued

Example participant - Reggie

- 6-year-old diagnosed with autism, fragile X syndrome, and profound MR

Primary target behaviors: aggression, disruption, and elopement



Conclusions

Important to use data to make decisions regarding the efficacy of medication effects
 Critical component of team-based approach
 Perfect opportunity to bring together expertise in biomedical and behavioral approach to treatment
 Opportunities for this combined approach in conducting better clinical trials (both industry-sponsored and investigator initiated)

Thank you

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