Conduct disorder: key biological risk factors, comorbid conditions and synergistic biological treatments

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Outline of presentation

1. Conduct disorder: definition
2. Key biological risk factors
3. Key comorbid conditions: definition
4. A model for intervention
5. Key medication treatments
"Hello, Emily. This is Gladys Murphy up the street. Fine, thanks ... Say, could you go to your window and describe what's in my front yard?"
1. **Conduct disorder: definition**

Diagnostic nosology-some comments:

DSM-IV definition of a mental disorder-
A mental disorder is conceptualized as

a clinically significant

*behavioural pattern* that occurs

in an individual

and

is associated with *impairment* in

one or more areas of functioning

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1. Conduct disorder: definition

Diagnostic nosology-some comments

in children and adolescents-

impairment is *developmentally inappropriate*,
judged relative to children of the same age, gender and IQ
in social, academic, occupational or other important areas of functioning

*multi-informant* reports required

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1. **Conduct disorder: definition**

The Spectrum of Antisocial Behaviour (Steiner, 1999)

- antisocial behaviour
- criminality and delinquency
- antisocial behaviour and psychopathology
- persistent conduct problems
- conduct disorder

- psychopathy

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1. **Conduct disorder: definition**

**Oppositional defiant disorder (ODD)**

-a recurrent pattern of negativistic, defiant, and hostile behaviour
-onset usually before 7 years of age
-usually first emerges in the home setting
-always a precursor for Conduct disorder (approximately 3% of children with ODD develop CD)
-prevalence (2%-16%) have been reported (Loeber et al. 2000)
1. **Conduct disorder: definition**

Conduct disorder (CD)

-repetitive and persistent pattern of behaviour in which the basic rights of others and/or major age-appropriate norms or rules are violated, evidenced by three or more of the following criteria within the previous 12 months, with at least one criterion present in the past 6 months:
- Serious violations of social rules/norms
  - Theft
  - Destruction of property
  - Aggression/Cruelty towards people and/or animals

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1. Conduct disorder: definition

COMORBIDITY of ODD/CD

- ADHD, combined type,
- language-based learning difficulties/disorders
- depressive disorders
2. Conduct disorder: Key biological risk factors

- lower verbal/performance IQ;
- hypo-arousal; hyper-arousal;
- irritability;
- executive function deficits-
  especially response inhibition and working memory

- comorbid alcohol/substance abuse/dependence disorders

- NB: within-individual factors have to be considered in the
  interpersonal context (for example, ‘chaotic’ family factors)

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2. Conduct disorder: Key biological risk factors

- verbal: visuospatial IQ

relatively diminished ability to label feeling states and develop internal coping strategies
2. Conduct disorder: Key biological risk factors

Prefrontal cortex function

Arousal level
2. Conduct disorder: Key biological risk factors

![Graph showing mood and euthymia over time]

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2. Conduct disorder: Key biological risk factors

Arousal dysregulation: optimise physiological arousal
optimise habituation

Mood dysregulation: decrease irritability
increase emotional salience
2. **Conduct disorder: Key biological risk factors**

- Executive functioning deficits

  Response disinhibition: motor and cognition
  optimise response speed and accuracy

  Working memory deficits: verbal and visuospatial
  optimise span and strategy
Figure 8.1 The prefrontal, parietal, and temporal association cortices form interconnected networks that play complementary roles in attentional processing.
Figure 16.1. Central organisation of the frontal—subcortical circuits.

Figure 16.2. Organisation of the frontal—subcortical circuits (see also Cummings, 1993). (NB: indirect circuits of the substantia nigra and subthalamic nucleus are not shown.)
"All right, Billy, you just go right ahead! . . . I've warned you enough times about playing under the anvil tree!"
3. **Key comorbid conditions: definition**

Attention Deficit Hyperactivity Disorder (ADHD)

**DSM-IV CRITERIA**

- six or more symptoms, at least six months, maladaptive/inconsistent with developmental level
- inattention dimension and/or
- hyperactivity-impulsivity dimension
- evident at least two settings
- onset before seven years of age
- impairment social, academic, occupational functioning
- symptoms not due to a PDD, Psychotic, Mood, or Anxiety Disorder

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3. Key comorbid conditions: definition

TYPES of ADHD

- combined type
- predominantly inattentive type
- predominantly hyperactive-impulsive type

3-5% prevalence in primary school age children

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3. Key comorbid conditions: definition

COMORBIDITY of ADHD

- Oppositional-Defiant through to Conduct Disorders
- language-based Learning Disorders
- anxiety and depressive symptoms and/or Disorders
- developmental coordination disorder
3. **Key comorbid conditions: definition**

Major depressive disorder – one or more episode(s) characterized by the following:

*period of two weeks or more*

- depressed and/or irritable mood predominant and/or
- loss of interest or pleasure
- 3 or 4 or more of the following;
  - feelings of worthlessness or excessive or inappropriate guilt,
  - >5% weight change in a given month, in/hyper somnia,
  - psychomotor agitation/retardation, anergia (fatigue), decreased concentration or ability to think or decisiveness, recurrent thoughts of death, suicidal ideation, suicide plan or suicide attempt.

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3. **Key comorbid conditions: definition**

Dysthymic disorder is characterized by the following:

1 year or more *(most of the day, for more days than not)*,

<2 months absence in a given year

-depressed and/or irritable mood predominant

-2 or more of the following:
  
  - feelings of hopelessness, low self-esteem, appetite change,
  - in/hyper somnia, anergia (fatigue), decreased concentration or decisiveness

*no major depressive episode evident in first year of the symptoms*
3. Key comorbid conditions: definition

-Dysthymic disorder: most common pre-puberty
Major depressive disorder: most common post-puberty

- COMORBIDITY of depressive disorders

anxiety disorders
oppositional-defiant through to conduct disorders
"Rub his belly, Ernie! Rub his belly!"
4. A model for intervention

-assessment and treatment focuses on delineation of risk factors and resilience factors—biologically (eg, executive function deficits; good arousal regulation) psychologically (eg, externalise blame; balanced critical self-reflection) and socially (eg, hostile critical interpersonal environment; confiding, nurturing consistent interpersonal environment)

-monitoring of these risk and resilience factors and their response to treatment through developmental phases

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4. **A model for intervention**

-a practical approach

[A] psychological and social treatment approach implemented for 4-6 weeks

key elements are the interpersonal and the intra-individual milieu

[B] key other vulnerabilities addressed – vision, hearing, specific verbal and/or visuospatial learning difficulties, developmental coordination difficulties

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4. **A model for intervention**

- a practical approach

[C] medication use to facilitate availability of the young person to learn from the psychological and social interventions through

- better arousal regulation
- better mood regulation
- better executive functioning

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4. A model for intervention

Arousal dysregulation: optimise physiological arousal
optimise habituation

Mood dysregulation: decrease irritability
increase emotional salience

Executive functioning: optimise response speed and accuracy
optimise span and strategy
5. **Key medication interventions**

**Arousal regulation:**

- **physiological arousal**
  - clonidine
  - benzodiazepines
  - TCA
  - antipsychotic medication

- **habituation response**
  - clonidine
  - benzodiazepines
  - TCA?
  - antipsychotic medication?
5. Key medication interventions

Mood dysregulation:

- irritability: SSRI, TCA, antipsychotic medication, stimulant medication
- emotional salience: stimulant medication, SSRI?, TCA?
5. Key medication interventions

Executive functioning
Response inhibition:
  motor and cognition  stimulant medication
  speed and accuracy  -linear dose response
Working memory:
  span  clonidine higher dose
  strategy  stimulant medication
  -inverted parabolic response
  -linear dose response
  clonidine higher dose

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5. Key medication interventions

-start low, go slow, finish slow, although same optimal doses are suggested

-children versus adults:

  higher doses with more frequent dosing
  NB: increased distribution and more rapid clearance
  NB: daily compliance issues

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Summary

- spectrum of ODD → CD

- within-individual biological risk factors are important
  - arousal dysregulation
  - mood dysregulation
  - executive dysfunction

- these factors contribute to onset and progression of key comorbid disorders: depressive disorders and ADHD
Summary

- medication can aid a child’s ability to invest in a psychosocial treatment program and learn from this program

- usually use medication for 1-2 terms with thorough re-review every 6-12 months because of development