Resume Childhood Autism and Autism Spectrum Disorders (or Pervasive Developmental Disorders)

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Introduction

Concept and Diagnosis of Autism

History of Autism

“Autistic Disturbances of Affective Contact” (Kanner, L., 1943)
(1944 early infantile autism)
Autistisch Psychopathen im Kindersalter (Asperger, H. 1944)

Three myths of autism based on psychoanalytic theories
1. 'Autism' ; defense against parents especially mothers.
2. good or excellent potential intelligence.
3. no brain organic lesions.

Collapse of the myths and development of a new concept
Defined as behavioral syndrome at present

Diagnostic criteria of Autism

Age at onset; usually before 3 years old.
Three major or necessary behavioral symptoms;
A. Qualitative impairment in reciprocal social interaction
B. Qualitative impairment in verbal and nonverbal communication, and in imaginative activity
C. Markedly restricted repertoire of activities and interests

(ITED-10 & DSM-IV-TR)

Pervasive Developmental Disorders (PDDs) or Autism Spectrum Disorders (ASDs)

Autism (Childhood autism)
Atypical autism
Rette’s syndrome
Other childhood disintegrative disorder
Overactive disorder associated with mental retardation and stereotyped movements

Autistic disorder
Rette’s disorder
Childhood disintegrative disorder
Asperger disorder
PDDNOS

(DSM-IV-TR)
Asperser’s syndrome
Other
Unspecified (ICD-10)

Differential Diagnosis
Other PDD
Specific developmental disorders
or so called Learning disabilities
Mental retardation or Intellectual disability
Hyperkinetic disorders or AD/HD
Schizophrenia
Elective mutism
Other

Associated Behavioral Problems
Infancy to childhood;
sleep disturbances, eating problem, hyperkinesis, peculiarities in perception
Puberty to young adulthood
inertia, obsessive-compulsive disorder (OCD) like behavior, self-injurious behavior (SIB), aggressive behaviors, mood swings

Intelligence and Cognition
Since autism is a behavior syndrome, each autistic child has different intelligence
Cognitive skills are usually uneven
Intelligence develops with age

High functioning PDD
Early Symptoms

<table>
<thead>
<tr>
<th>I</th>
<th>Delayed speech and other speech problems</th>
<th>Retarded-like behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>II</td>
<td>Delayed overall motor development</td>
<td>Excessive sleepiness</td>
</tr>
<tr>
<td>III-A</td>
<td>No good at forming interpersonal relationships</td>
<td>Poor response to others</td>
</tr>
<tr>
<td>III-A</td>
<td>Poor relationships in peer group/subgroup</td>
<td>Ignoring verbal comments as if deaf</td>
</tr>
<tr>
<td>III-A</td>
<td>Showing excessive separation anxiety from mother</td>
<td>Resistance to attending school or kindergarten</td>
</tr>
<tr>
<td>III-A</td>
<td>Inappropriate response to emotions</td>
<td></td>
</tr>
<tr>
<td>III-B</td>
<td>Restlessness and hyperactivity</td>
<td>Unusual habits or patterns</td>
</tr>
<tr>
<td>III-B</td>
<td>Abnormal food preference, picky and/or refusal to eat</td>
<td></td>
</tr>
<tr>
<td>III-B</td>
<td>Nervousness and sensitivity</td>
<td></td>
</tr>
<tr>
<td>IV</td>
<td>Enuresis and encopresis</td>
<td>Self-injury</td>
</tr>
<tr>
<td>IV</td>
<td>Violence and aggressiveness</td>
<td>Sleep terror or nightmares</td>
</tr>
<tr>
<td>IV</td>
<td>Tic</td>
<td></td>
</tr>
</tbody>
</table>

**Present Symptoms**

Fig. 3. Frequency of item responses for early and present symptoms of infantile autism and mental retardation.

(Ohta M et al. 1987)

Course

Wing's Subtypes

*Psychiatric Conditions in Adolescence & Young Adulthood*

epilepsy, OCD, Tourette syndrome, mood disorders, psychogenic reaction or neurotic state, catatonia like symptoms, schizophrenia, deterioration etc.
## Social Outcome

### ASJ

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
<th>Unknown</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed</td>
<td>56</td>
<td>9</td>
<td>3</td>
<td>68</td>
<td>18.4</td>
</tr>
<tr>
<td>Public/private workshop</td>
<td>75</td>
<td>14</td>
<td>5</td>
<td>94</td>
<td>25.5</td>
</tr>
<tr>
<td>Institution</td>
<td>172</td>
<td>37</td>
<td>8</td>
<td>207</td>
<td>56.1</td>
</tr>
</tbody>
</table>

(Autism Society Japan 1992)

### Kobayashi (See Slide)

### High and Low Stage Group (See Slides)

### Epidemiology: Prevalence
Biology of Autism

Frequently Associated Medical Conditions
Tuberous sclerosis, Recklinghausen’s disease, West syndrome etc.

EEG and Epilepsy
High frequency of abnormal EEG and Epilepsy

Cumulative Ratio of Epilepsy in Course of Autism

<table>
<thead>
<tr>
<th>Year</th>
<th>Ratio(%)</th>
<th>Number of subjects</th>
<th>Number of subjects with epilepsy</th>
<th>Mean age of subjects (Range)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keyakinosato 1993</td>
<td>33.3</td>
<td>60</td>
<td>20</td>
<td>25yr (18°38yr)</td>
</tr>
<tr>
<td>Kawasaki et al. 1988</td>
<td>30.1</td>
<td>209</td>
<td>63</td>
<td>14 (10-22)</td>
</tr>
<tr>
<td>Shimizu et al. 1987</td>
<td>25.0</td>
<td>100</td>
<td>25</td>
<td>14 (5-27)</td>
</tr>
<tr>
<td>Gillberg et al. 1987</td>
<td>26.1</td>
<td>23</td>
<td>6</td>
<td>- (16-23)</td>
</tr>
<tr>
<td>Kobayashi et al. 1985</td>
<td>14.4</td>
<td>90</td>
<td>13</td>
<td>16 (12-27)</td>
</tr>
<tr>
<td>Matsumoto et al. 1982</td>
<td>12.1</td>
<td>91</td>
<td>11</td>
<td>14 (9-22)</td>
</tr>
<tr>
<td>Lotter et al. 1974</td>
<td>20.0</td>
<td>30</td>
<td>6</td>
<td>- (16-18)</td>
</tr>
<tr>
<td>Rutter et al. 1974</td>
<td>28.1</td>
<td>64</td>
<td>18</td>
<td>22</td>
</tr>
<tr>
<td>Kanner 1971</td>
<td>18.2</td>
<td>11</td>
<td>2</td>
<td>- (29-39)</td>
</tr>
</tbody>
</table>

Frequency of Epileptic Seizures in Autism & MR

Facilities | Low | Moderate | high | total |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>S for MR</td>
<td>5</td>
<td>0</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Keyakinosato</td>
<td>14</td>
<td>5</td>
<td>1</td>
<td>20</td>
</tr>
</tbody>
</table>

Low; No seizures more than 1 year
Moderate; less than several times during a year
High; more than Moderate

(Low & Moderate vs High  p=0.009 Fisher)

Ratios of Epilepsy in Autism and MR

<table>
<thead>
<tr>
<th>Facilities</th>
<th>Epilepsy</th>
<th>Non</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>S for MR</td>
<td>10 (25%)</td>
<td>30 (75.0)</td>
<td>40</td>
</tr>
<tr>
<td>Keyakinosato</td>
<td>20 (33.3)</td>
<td>40 (66.6)</td>
<td>60 (ns)</td>
</tr>
</tbody>
</table>
**EEG Abnormal Findings in Autism**

<table>
<thead>
<tr>
<th>EEG findings</th>
<th>cases</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spike or sharp wave</td>
<td>25</td>
<td>(61)</td>
</tr>
<tr>
<td>14&amp;6 Hz P.S.</td>
<td>18</td>
<td>(43)</td>
</tr>
<tr>
<td>poly-spikes</td>
<td>3</td>
<td>(7)</td>
</tr>
<tr>
<td>spike &amp; wave complex</td>
<td>3</td>
<td>(7)</td>
</tr>
<tr>
<td>extreme spindle</td>
<td>1</td>
<td>(2)</td>
</tr>
</tbody>
</table>

**Brain Imaging**

Hypoplasia of vermis of cerebellum, true?

"large brain"

**Neuropsychological Theories of Autism**

**Theory of Mind (ToM)**

Autistic children are “mind-blind”?

First and second order false belief tests

**Executive Function**

This is the cognitive construct used to describe behaviors thought to be mediated by the frontal lobes (Duncan 1989 Ozonoff 1995).

Neuropsychological tests for EF; WCST, Tower of Hanoi etc.

**Weak Central Coherence**

**Genetics**

<table>
<thead>
<tr>
<th>Reports Year</th>
<th>Year</th>
<th>MZ</th>
<th>DZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Folstein &amp; Rutter 1977</td>
<td>4/11</td>
<td>0.36</td>
<td>0/10</td>
</tr>
<tr>
<td>Steffenburg et al 1989</td>
<td>10/11</td>
<td>0.91</td>
<td>0/10</td>
</tr>
<tr>
<td>Ritvo et al 1985</td>
<td>22/23</td>
<td>0.96</td>
<td>4/17</td>
</tr>
<tr>
<td>Smalley et al 1988</td>
<td>9/11</td>
<td>0.82</td>
<td>2/9</td>
</tr>
<tr>
<td>Wakabayashi et al 1981</td>
<td>3/8</td>
<td>0.39</td>
<td>0/2</td>
</tr>
<tr>
<td>Total</td>
<td>48/64</td>
<td>0.75</td>
<td>6/48</td>
</tr>
</tbody>
</table>

(Nakane 1998)
**Developmental Psychopathology of Autism**

*Characteristics in Standard Psychological Tests*

1. autistic children reject tasks not due to "autistic shell", but due to difficulty of tasks
2. relatively few autistic children obtain IQ scores within normal range, and most function at a severely retarded level
3. IQ scores are remarkably stable, regardless clinical changes in behavior
4. Wechsler tests show a characteristic profile
5. obtained IQ scores are predictive of later adjustment

**Cognitive Crisis Points in terms of Development**

Four crisis points in cognitive development of the preschool period

1. differentiation of "means" and "end" in Non-symbolic period or Sensory-motor period
2. finding of "name", that is, every things have their own names
3. formation of basic concepts, including concepts of relationships such as comparison, spatial concepts
4. acquisition conservation of quantities
5. end of preoperational period

**Evaluating Cognitive Development in Autistic Children**

Language Decoding Test Revised (LDT-R)

Ohta’s Stage Evaluation (OSE)

(See the another copy of paper attached)}
**Treatment of Autism**

**Historical Review of Treatment**
- Treatment based on psychoanalytic or dynamic theories
- Behavioral approaches
- Cognitive behavioral approaches
- Cognitive developmental approaches

**Two Facets of Treatment for Autistic Individuals**
- Environment modulation (indirect treatment)
- Direct treatment

**Direct Treatment**
- Levels of treatment
- Means of treatment;
  - Remedial therapy or psycho-educational therapy
  - Psychotherapy
  - Biological therapy, mainly medication

**Modern Principles of Remedial Therapy or Psycho-educational Therapy**
- Developmental perspective
- Difficult to facilitate learning under free situations
  - Appropriate tasks and structured settings
- Programs reducing abnormal behavior must combine with those enhancing adaptive behaviors
- Non-aversive approach
- To make comprehensive programs under consideration of three dimensions;
  1. to facilitate development of basic cognition including emotion,
  2. to facilitate adaptive behaviors,
  3. to reduce or control abnormal behaviors

**Multidimensional Assessment**
- Medical, Behavioral, Cognitive, Emotional
- Socio-psychological, Parents satisfaction etc.
Cognitive Developmental Therapy

To be described elsewhere

Medication

Target Medication: Two Types of Psychiatric and Behavioral Problems

Non-specific;
  aggressiveness, SIB, explosiveness, rage outbursts etc.
Specific or super-imposed psychiatric conditions or comorbidity;
  epilepsy, Tourette’ syndrome, obsessive compulsive disorders, mood
  disorders, catatonia

Anti-psychotics

To date have been the most helpful in ameliorating some cardinal behavioral
  symptoms. Classic anti-psychotics with high potency or atypical anti-psychotics are
  useful.
  Ex. haloperidol, piomzide, resperidone etc.

Side Effects of Neuroleptics

  Sedation
  Parkinsonism / extrapyramidal side effect
  Tardive dyskinesia

Other Psychoactive Agents

  Selective serotonin reuptake inhibitors (SSRI),
  Methylphenidate (Ritalin), Lithium etc

Anticonvulsants

Family Support Programs

  It is one of the most important findings that “parents” are not the etiological agent
during the past few decades
REFERENCES


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