

Differences in Clinical Characteristics of Children Diagnosed with Autism under 4yrs of age vs Children diagnosed after 4 yrs

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OBJECTIVES

To characterize clinical presentation of children initially diagnosed with ASD under 4yrs of age and compare then to those diagnosed over 4yrs of age in an urban, multiethnic, multiracial community based program.

DESIGN/METHODS

Review of all children initially diagnosed of ASD from 2003 to 2012 at an inner-city University Affiliated Developmental Center. Data included demographics, family history and clinical characteristics. Information also included autistic characteristics from the Diagnostic and Statistical Manual for Mental Disorders (DSM-IV), scores from the Childhood Autism Rating Scale (CARS) and Vineland Adaptive Behavior Composite. Statistics included chi-square, t-test, and non-parametrics,

RESULTS

Demographic Characteristics by Age

Demographic Characteristics	Children under 4yrs	Children over 4yrs	p*
	N=354	N=158	
Mean age at diagnosis (mo ± SD)	30±7	60±8	
Gender Male/Female	269(76%)/85(24%)	132(84%)/26(16%)	0.06
Use of Medicaid n (%)	212(61%)	88(57%)	0.4
Ethnicity n (%)			0.2
Hispanic	147 (45%)	75 (49%)	
White	61 (19%)	17 (11%)	
Black	82 (25%)	46 (30%)	
Other	33 (10%)	13 (8%)	
Bilingual	138 (39%)	59 (37%)	0.7
Level of maternal education n (%)			0.9
Less than High School	49 (17%)	15 (12%)	
High School Graduate/GED	54 (19%)	26 (21%)	
Some college	76 (27%)	36 (31%)	
College Graduate	74 (26%)	31 (25%)	
Advanced Degree	34 (12%)	12 (10%)	
Mother born in US (%)	190 (65%)	62 (51%)	0.009
First Born	75 (29%)	67 (32%)	0.5

Clinical Characteristics by Age

Clinical Characteristic	ASD under 4yrs	ASD over 4yrs	p*
Cognitive nonverbal >70	126 (49%)	46 (45%)	0.4
Language Regression	83 (24%)	27 (17%)	0.1
Toe walking	128 (37%)	26 (17%)	<0.001
CARS score	35 ± 5	35 ± 7	0.9
Seizures	15 (4.4%)	6 (3.8%)	0.5
Vineland	69 ± 10	61 ± 12	<0.001
Family history of ASD	39 (17%)	28 (18%)	0.7

DSM-IV TR Symptom Checklist

Qualitative Impairments in Communication

Clinical Characteristic n (%)	Under 4yrs	Over 4 yrs	p*
Delay or lack of development of spoken language	258 (88%)	68 (60%)	<0.001
If adequate speech, impairment in the ability to initiate or sustain conversations	64 (22%)	63 (56%)	<0.001
Stereotyped and repetitive use of language	137 (47%)	88 (77%)	<0.001
Lack of varied make-believe play/social imitative play	197 (67%)	55 (48%)	<0.001

Qualitative Impairments in Social Interaction

Clinical Characteristic n (%)	Under 4yrs	Over 4yrs	p*
Impairment in use of nonverbal behaviors	232 (78%)	87 (76%)	0.6
Failure to develop peer relationships	192 (65%)	80 (70%)	0.4
Lack of spontaneous seeking to share enjoyments and interests	173 (59%)	28 (24%)	<0.001
Lack of social emotional reciprocity	184 (63%)	68 (60%)	0.6

Restricted/Repetitive/Stereotyped Patterns of Behavior

Clinical Characteristic n (%)	Under 4yrs	Over 4yrs	p*
Preoccupation with one or more stereotyped patterns of interest	124 (42%)	66 (58%)	0.007
Adherence to specific nonfunctional routines or rituals	92 (31%)	49 (43%)	0.03
Stereotyped and repetitive motor mannerisms	181 (62%)	67 (59%)	0.5
Preoccupation with parts of objects	140 (48%)	40 (35%)	0.02

CONCLUSION: In this ethnically diverse population, children diagnosed with ASD after 4 yrs of age did not have more severe symptoms of Autism or more cognitive impairment. However, children diagnosed after 4yrs showed more stereotyped patterns of interests, more stereotyped language and inflexible routines. Children diagnosed under 4yrs were more likely to show lack of shared enjoyment/interests, lack of pretend play, toe walking and more likely to have a US born mother. Elucidating factors associated with a later ASD diagnosis in a diverse population is an important step towards timely ASD diagnosis.

BACKGROUND

Early diagnosis of Autism Spectrum Disorder (ASD) has been associated with better long term prognosis. Children who receive early intensive services for ASD show better developmental function, improved language and social emotional skills. However, despite our ability to identify ASD by 2 yrs of age, studies show that ASD diagnosis is still delayed into the preschool years and beyond. Factors associated with earlier diagnosis have included greater symptom severity, higher socioeconomic status and greater parental concerns. However, studies looking at clinical characteristics in ethnically, racially diverse groups are sparse and have shown conflicting results.