

## **Autism Spectrum Disorder in Children and Language Delays in their Parents when Children**

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### **Abstract:**

*AIM: To assess the relationship between ASD in children and the language delays in their parents when children.*

*METHODS: A total of 54 children were evaluated for ASD and the level of their language development in the National Center for Growth, Development and Rehabilitation of Children in Tirana, Albania. Both their parents were also evaluated for ASD and also retrospectively were accurately evaluated if they had any language delay as children. Language delay was defined as : no words spoken until 18 up to 20 months of age and normal language development after 54 months of age.*

*They were chosen randomly and signed a consent form of participation in the study. All ASD subjects met the criteria of DSM -IV and were given the diagnosis using ADOS and ADI-R tests. All ASD children were children diagnosed with infantile autism and PDD-NOS. Children with Asperger syndrome, Rett syndrome and Childhood Disintegrative Disorder were excluded from the study.*

*RESULTS: From the total of 108 parents, both mothers and fathers of children with ASD, 21 of them had language delay as children (19%). From the total of 54 children in 18 of them only one parent had language delay as children (33%), in 3 children both mother and father had language delay (5.5%). From the total of 21 parents with language delay in 15 subjects was the father who had the language delay (71% of parents), and in 6 cases was the mother who presented the language delay (29%).*

*CONCLUSION: There is a strong relationship between autism spectrum disorders and language delay in the parents of autistic children. This findings not only emphasizes the role of genetics in the development of the autism disorder but also underline the importance of accurate screening for ASD of young children whose parents had a language delay.*

**Keywords:** *autism, children, language delay, early identification, parent, autism genetics*

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### **1. INTRODUCTION**

Autism spectrum disorder in children is now one of the most common neurodevelopmental disorder. It is usually diagnosed by 2 years of age and affects three areas of development: social awareness and interaction, verbal and non verbal communication and repetitive and restrictive behavior.

Language is the most complicated and important human activity that starts early in childhood as other developmental activities. Autism Spectrum Disorders have many effects on speech and language development. Children with autism may have language disruptions and delays or hyperfluency. This range of language symptoms probably shows the multitude of gene networks associated with autism. It is important to connect specific gene network with particular language related symptoms.

Language development in children with autism varies from the language development in children without autism. Language development delay is usually the first sign that parents notice in their children and one of the signs that concerns them most. In most cases is one of the main reasons the parents consult a child neurologist or developmental pediatrician. Speech and language development is a useful initial indicator of a child overall development and cognitive level.

The diagnosis of ASD now can be correctly be made by using ADOS and ADI-R starting from two years of age. By ADOS you can also evaluate and score the level of communication and language development in these children.

Research aiming to uncover the pathogenesis of autism may lead to evidence based approaches with regards to treatment and early diagnosis.

Strong evidence supports a genetic etiology in autism and twin and family studies have shown that genetic liability appears to be expressed among unaffected relatives of children with autism through features that might be milder but qualitatively similar with ASD. This constellation of subclinical language and personality features is commonly referred to as “the broad autism phenotype”

While autism by definition involves serious impairment across all three domains evidence suggests that these features can segregate independently in unaffected relatives with broad autism phenotype.

As many as two thirds of children with autism spectrum disorders also have language impairments which can range from mild limitations to complete non verbal behavior. The remaining third may have normal or even above normal language development. This raises the question if there is a genetic link between language impairment and autism. There was a study done by Bartlett and published in the American Journal of Psychiatry in 2013 that found a relationship between language impairment and autism. The same genes active in language impairment appear in ASD but their effect is amplified in ASD. (Bartlett C. 2013)

Another study from Pedersen T. published in 2013 in the American Journal of Psychiatry (Pedersen T. 2013) found also a link between autism in children and language impairment in family members of autistic children. In this study 79 families who had one child with autism and at least one family member with language impairment including parents, grandparents, siblings and in some cases uncles, aunts or cousins underwent a battery of tests to assess language development. The study concluded that there were shared patterns of DNA between autistic children and their relatives with language impairment.

The study concluded that genes in the narrow region of two chromosomes (15q23 26 and 16p12 responsible for oral and written language impairments can result in similar behavioral characteristics with one family member developing autism and the other one having only language difficulties.

## **2. METHODS**

54 children aged from two to six years of age who receive rehabilitation therapy in the National Center for Growth Development and Rehabilitation of Children, in Tirana, Albania were recruited as part of the study.

Also both parents of children with ASD, mother and father were part of the study. The parents signed a consent form for participation in the study.

Siblings, grandparents or other cousins, uncles and aunts etc of the autistic children were not taken into consideration and were not screened if they had any language disorder during their childhood.

All children had their Autism Spectrum Disorder diagnosis confirmed by ADOS (Autism Diagnostic and Observation Schedule) and ADI R, (Autism Diagnostic Interview Revised). All children met the criteria of diagnosis for Infantile Autism or Pervasive Development Disorder not otherwise specified. Children diagnosed with Asperger syndrome, Rett Syndrome or Childhood Disintegrative Disorder were excluded from the study.

All parents were screened retrospectively for language delay while children. Language delay was defined as: no full words or sentences spoken until 18 up to 20 months of age and full language acquisition while 54 months of age.

The parents who had had language delay while children that was due to genetic syndromes, severe cognitive delay or any other cognitive or physical problems were excluded from the study.

For the language and speech development assessment for the parents was used retrospectively the Questionnaire on Speech and Language Development, subcategory one, for children from 18 until 20 months of age and subcategory 3 for children 54 months of age.

The questionnaire is used in EU and is compiled by Standing Liaison Committee of EU Speech and Language Therapists and Logopedists. The Italian version of it was validated for use in Albania and Albanian language.(cplol.eu)

Subcategory one screens interaction and attention, gestures and action, comprehension and language expression. Subcategory three screens interaction and attention, comprehension and language expression.

Also the medical records of the parents from their family pediatrician were observed to exclude any parents with language delays caused by cognitive and physical conditions and to confirm the results of the questionnaire.

The level of language acquisition of the autistic children and the relationship between it and parents language delays was not studied and was not the aim of this study. This means that children with ASD presented with different levels of acquisition of expressive and receptive language.

### **3. RESULTS**

From the total of 108 parents, both mothers and fathers of children with ASD, 21 of them had language delay as children (19%). The language delay was present when the mother or father of the ASD children was 18 until 30 months of age and was almost normal when they were 54 months of age.

From the total of 54 children in 18 of them only one of their parents, either mother or father had language delay as children (33%),

In 3 children diagnosed with ASD both mother and father had language delay when children (5.5%).

From the total of 21 parents who had language delay as children, in 15 subjects was the father who had the language delay (71% of parents with language delay).

In 6 cases was the mother who presented the language delay (29% of parents with language delay).

No significant changes were observed between parents coming from rural areas or big cities. From the 21 parents with language delay as children 10 of them came from the city(47%), and 11 of them came from rural areas(53%).

### **4. DISCUSSION**

Autism Spectrum Disorder is a severe neurodevelopmental disorder whose causes are not yet recognized and whose prevalence is still on rise. This study helps understand a little bit more the mechanisms that underlie autism as well as other associated impairment that accompany most children affected by ASD.

Language delay or language impairment is just one of the many communication disorders that affect children.

Language delay or impairments and Autism spectrum disorders are complicated disorder and have numerous genetic factors.

In this study there was a strong relationship found between autism spectrum disorders and language delay in the parents of autistic children. This might mean that there is a shared mechanism for both disorders. This findings not only emphasizes the role of genetics in the development of the autism disorder but also underline the importance of accurate screening for ASD of young children whose parents had a language delay.

This is a rather small and limited study that is supported by prior studies in trying to identify a possible similar cause for ASD and language delays or impairments. Of course the next step will be to sequence the whole genome of the families and children in the study in order to identify if

possible any specific genes or mutations that might be common for both pathologies. This makes it challenging to connect specific gene networks with particular language related symptoms.

## **5. CONCLUSION**

There is a strong relationship between Autism Spectrum Disorders in children and language delays in their parents emphasizing the genetics as plausible cause for both disorders.

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## **Conflict of Interest**

None declared

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