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2021

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Autism could be predicted from blood or urine tests soon

By Ananya Mandal, MD Feb 19 2018

Thousands of children are being diagnosed with autism on the basis of tests that are mainly based on the behaviour of the child and his or her responses to the tests and behavioural assessments. In short, there are no blood tests or urine tests that can be used to diagnose autism. In a new study, a team of researchers have found blood and urine chemical markers that could help diagnose this condition.

The researchers from the University of Warwick and the University of Bologna, noted that children who have autism have higher levels of a particular protein damage when compared to children without autism. Autism being a notoriously difficult to diagnose condition, this test could help improve the diagnostic tests for this condition as well as rule out false diagnoses. The time when this test becomes routine for diagnosis of autism is far away the researchers caution because the test needs to undergo clinical trials and testing before it can be available for use. The results from the study titled, "Advanced glycation endproducts, dityrosine and arginine transporter dysfunction in autism - a source of biomarkers for clinical diagnosis", was published in the latest issue of the *Molecular Autism Journal* this Monday (19th February 2018).

Autism is a range of behavioural disorders seen among children where social interactions and communications are severely hampered. Diagnosis is typically made after the age of two because it depends on the behavioural assessments of the child.

In this new study the team of researchers checked for chemical differences in the blood and urine collected from 38 autistic children and 31 children without autism. The children were aged between 5 and 12 years. They noted that children with autism typically had higher levels of protein damage in their blood plasma that raised their risk of autism. Higher protein damage showed to higher levels of ditryosine and sugar-modified compounds called glycation end products. Dityrosine is also called an oxidation marker. Paul Thornalley, a professor in systems biology at the University of Warwick, who co-led the

study explained that these damaged proteins could be the cause for development of autism.

Dr Naila Rabbani, from the University of Warwick, who led the study, said that these markers could be used to detect autism much earlier than now by merely measuring these biomarkers. She explained that their study was a small one and needed to be replicated in large populations to be validated. She said that they would test the diagnostic tool on children below the age of two years to see if the changes in these biomarkers appeared before the age of two. The test, when successful in large cohorts, would be validated and useful for general populations she explained. She also added that larger studies and more research would reveal the cause and factors that are associated with autism which still is a poorly understood condition.

Autism affects one in 100 individuals in the UK and more males are affected than females ranging from two to 16 times more prevalence among men than women. In the United States, over 3.5 million individuals live with autism. With improvement in diagnostic techniques the diagnosed cases have risen over the past two decades. Autism cannot be cured but some interventions may help say researchers.

Source:

https://molecularautism.biomedcentral.com/articles/10.1186/s13229-017-0183-3