

## Clinical features and possible correlations between autism and epilepsy

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*Background and Objectives:* Autism was reported in pediatric psychiatry as autistic disturbances of affective contact by Leo Kanner in 1943 and as autistic psychopathy by Hans Asperger in 1944. Since then it has been classified into two categories: autistic disorder and Asperger's disorder. However, as the two disorders have similar clinical features, no clear differences are defined in the DSM-IV diagnostic criteria. In the discussions on the two disorders in the past 10 years, a broader concept called autism spectrum disorders has appeared, and this makes their distinctions more vague. As the rate of epilepsy in autism is higher than in other disorders, the author compared the epilepsy in autistic disorder and Asperger's disorder to determine whether these two disorders are different. The author also attempt to clarify "obsession", which is seen in autistic disorder, Asperger's disorder, and epilepsy.

*Methods:* The clinical features of 252 autistic disorder patients and 76 Asperger's disorder patients seen in Hakuai Hospital since 1986 were analyzed. The diagnoses were based on DSM-IV. The development and psychological tests, and occurrence of epilepsy were noted. "Obsession" was categorized into: 1) obsession in "identity" preservation with things; 2) obsession in "perfection" preservation for activities and thinking of the patient himself/herself. An obsession rating scale was created based on 13 questions on: 1) preference for an article's position, arrangement, order preservation, and dislike for changes; 2) persistence in completing an action; continuous thinking about his/her problem until the patient finds a solution.

*Results:* Epilepsy occurred in 69/252 (27.4%) of autistic disorder, and 12/76 (15.8%) of Asperger's disorder, the difference was statistically significant. Mental retardation was present in 86.9% of 76 autistic disorder patients, and 33.3% of 12 Asperger's disorder patients who also had epilepsy. Of the autistic disorder patients, 92.7% has symptomatic epilepsy, partial or generalized. In Asperger's disorder, 58.3% has idiopathic generalized epilepsy. Generalized tonic clonic seizures occurred in 84.1% of the autistic disorder patients, and 58.3% of the Asperger's disorder patients. The age of onset of epilepsy ranged from 8 months to 25 years in autistic disorder, and 7 to 20 years for Asperger's disorder. In 89.8% of the autistic disorder, and 66.6% of the Asperger's disorder, there were sporadic seizures of once only at the seizure onset or on a yearly basis. As for clinical course, 31.9% of the autistic disorder had one seizure at the onset, the seizure was then controlled for the next 10 years, reaching its best control within 15 years, followed by relapse of seizures forming a J-curve. In 24.6%, seizures occurred for more than 16 years. By comparison, in 83.4% of the Asperger's disorder patients, seizures were controlled within 5 years. The age of the last seizure was 3 to 44 in the autistic disorder patients. It formed a moderate single peak curve with the peak at the age of 21 to 30 years. As for epilepsy prognosis, in the autistic disorder patients, there were two groups: a good prognosis group with seizures controlled by age 20 years, and a poor prognosis group whose seizures could not be controlled at age 20 years or more. In the Asperger's disorder patients, the seizures were controlled in all patients by age 20 years.

Obsession in "identity" preservation with things was observed only in the autistic disorder patients. Obsession in "perfection" preservation for activities was observed in autistic disorder, Asperger's disorder, and epilepsy. Obsession in "perfection" preservation for thinking was very similar in Asperger's disorder and epilepsy, and its differentiation was difficult. Difference in the two disorders was only identified in the clinical courses: obsession in Asperger's disorder was inherent while obsession in epilepsy appeared only after the onset of seizure.

*Conclusions:* Autistic disorder patients had both symptomatic and idiopathic generalized epilepsy, and majority of Asperger's disorder patients had idiopathic generalized epilepsy. As the causes of epilepsy in symptomatic and idiopathic generalized epilepsy are different, it implies that autistic disorder and Asperger's disorder are inherently different conditions. There are also differences between the obsession seen in autistic disorder and Asperger's disorder, again indicating that the two conditions may be different diseases.