

Comprehensive epilepsy care for pre-school age children

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Abstract

Pre-school children with epilepsy manifest delay in exploration and sociality independent of language ability, even if they have normal intellectual ability. They are immature in negotiating ability, which is based on emotion sharing with other children. The overprotection of the family might be a factor for this delay. The management of pre-school children with epilepsy should include early assessments of intellectual ability and behavioral development. Educational group therapy focusing on role playing activities among children, in combination with family therapy, is important to promote the development of sociality.

There are many researches concerning the relationship between epilepsy in children and cognitive disorder, especially intellectual impairment.¹⁻⁴ The association between epilepsy and behavioral disturbance focusing on attention disturbance and emotional disorders have also been reported.⁵⁻⁶ However, there are few studies on very young children with epilepsy investigating intellectual ability or level of behavioral development.⁷ In terms of psychological development, pre-school age is an important period in which children acquire sociality. The management of pre-school age children with epilepsy should include early assessments of intellectual ability and behavioral development, and the individual and group educational therapy is important to promote the development of sociality.

EDUCATION THERAPY

Educational group therapy in our hospital is divided into 3 groups. Group A is for children with intellectual ability under one year of age. The educational objective is to assist general development. The main teaching content is group therapy based on “Movement educational program assessment”.⁸ In accordance with motor stimuli, the children play with the rattle; or simple playing equipment is used to improve the manipulating ability by the hands, and communication skill. Group B is for children with intellectual ability ranging from age one to 3 years. The educational objective is to assist developmental of relationship with the adults, mainly the mothers; and the language ability used in daily life. The main

teaching content is group therapy consisting of body exercises, and use of instrument with singing according to music. Group C is for children with intellectual ability ranging from age 3 to 6 years. The educational objectives are improvement of coordinated movement, skilled motor behavior development and social development. The teaching content is group therapy consisting of mutual play between children.

Family therapy aimed to help parents understand their children’s conditions, developmental problems, and skills of handling their children are also conducted in conjunction with the educational therapy.

DELAYS IN SOCIAL DEVELOPMENT IN PRE-SCHOOL CHILDREN WITH EPILEPSY WITHOUT MENTAL RETARDATION

Among the children with epilepsy who were admitted to our hospital or attended the outpatient department, 29 children who underwent group therapy were studied. The chronological ages at the initiation of group therapy ranged from age of 3 years to 6 years. All the subjects had IQ of 70 or higher (mean, 93.5; range, 70 to 139) assessed by the Tanaka-Binet Intelligence Scale. Seizures occurred daily in 18 children, weekly in 2 children, monthly in 7 children, and well controlled in 2 children. All the subjects received antiepileptic drug treatment during the period of group therapy.

The level of behavioral development was assessed by the Tsumori Mental Development Scale for Infants and Young Children including five developmental domains (motor function,

exploration, sociality, activities of daily living and language).⁹⁻¹⁰ Questionnaires were constructed for three age groups of 3 to 7 years, 1 to 3 years, and 1 to 12 months, each containing activity items covering the 5 domains appropriate to the respective age levels. The questionnaires were handed to the mothers. After giving the relevant explanations and instructions, the mothers were asked to complete the questionnaires. To increase the reliability of the assessment, some supervisors also checked the children's behavior in the ward and in the group therapy. The total scores for each of the five domains were calculated, and the development quotient (DQ) was computed from the standard score for each domain.

DQ for the exploration and sociality domains were significantly lower than DQ for the motor function, activities of daily living, and language domains. DQ were also analyzed between epilepsy group without mental delay and age matched non-epilepsy group. DQ for exploration and sociality remained significantly lower than the other three domains in epilepsy groups as compared with the non-epilepsy controls.

RESULT OF GROUP THERAPY

The result of group therapy was evaluated in 12 children who had participated in at least 14 sessions. Group therapy consisted of role play sessions utilizing linguistic ability. After modeling the leaders in role plays, the children were encouraged to engage in role playing situation such as playing shopping or playing house. The later means playing the roles of father or mother. For example, preparing a meal or cleaning the floor, eating a meal, drinking, reading the newspaper. The performance of the children was used to assess the effect of group therapy. Observations were made while the children were playing among themselves. The 'levels of play behavior' were noted.¹¹ The effect of antiepileptic drug treatment during the period of group therapy was also evaluated. Significant therapeutic effect was defined as a reduction of seizure frequency to less than 50% of seizure frequency at the beginning of group therapy.

More than 80% patients showed advancement in the level of play behavior after the group therapy. The mode of play among these children advanced from 'parallel play' to 'associative play'. Further progression from 'associative play' to 'cooperative play' was observed in 2 children. The children became capable of organized play matching the aim of playing shopping.

As for the relationship between the effect of group therapy and antiepileptic drug treatment, 4 children failed to achieve pharmacological control of seizures. Three of these 4 children showed response to the group therapy. One child did not show response. In one child, seizures improved with antiepileptic drug treatment although group therapy was not beneficial. Therefore, response to group therapy did not necessarily correspond with effective pharmacological treatment. These results show that group therapy may be beneficial even if pharmacological treatment is not effective.

SUMMARY

Pre-school children with epilepsy manifested delay in exploration and sociality independent of language ability. In terms of the actual activities in the exploration domain, these children were less capable of symbolic play utilizing materials such as sand and blocks. The children have normal intellectual ability, and they have acquired the symbolizing function and symbolic intelligence, but they cannot translate them into actions when playing with other children. In the sociality domain, children with epilepsy were less capable to play house roles of father or mother, or play shopping with other children. They have difficulty asserting themselves, and in taking turns to use objects while playing. They are immature in negotiating ability, which is based on emotion-sharing with other children and self-awareness. The overprotection of the family might be a factor for this delay.¹²

The management of pre-school age children with epilepsy should include early assessments of intellectual ability and behavioral development. Educational group therapy focused on role playing activities among children in combination with family therapy is important to promote the development of sociality. Another of our research reveals that persistent educational therapy with family therapy can be useful to improve the quality of family life with epilepsy, even if patients have severe mental retardation and refractory epileptic seizures.¹³

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