

# Therapeutic Effect of Guilu Congnao Granules Combined with Acupuncture on Syndrome of Deficiency of Liver and Kidney with Mental Retardation

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**Abstract:** To observe the clinical effect of Guilu Congnao granules combined with acupuncture in the treatment of mental retardation syndrome of liver and kidney insufficiency. Sixty children with mental retarding syndrome of liver and kidney deficiency were randomly divided into two groups. The treatment group was given Guilucongnao granules combined with acupuncture and rehabilitation training, while the control group was given rehabilitation training only. The children in both groups were treated for three months, and the intelligence level of the children in both groups was statistically measured by Nimodipine before and after treatment. The Chinese revised Wechsler Childhood Intelligence Scale was used to compare the efficacy before and after treatment. The overall efficacy of the treatment group was better than that of the control group, and the comparison between groups was statistically significant ( $p < 0.05$ ). The curative effect of Gulumcongnao granules combined with acupuncture on children with mental retardation syndrome of liver and kidney insufficiency is obvious.

**Keywords:** Gulumcongnao Granules, Acupuncture, Mental Retardation, Yndrome of Liver and Kidney Insufficiency, Rehabilitation Training

Mental retardation, is a defect of cognitive function and social adaptability shown by children in the developmental stage due to abnormal brain function or structure. Only common defects of IQ and ability can be diagnosed. The incidence of mental retardation is 1%-3%, which has been increasing by year in recent years [1-2]. Children with intellectual development disorders have prominent cognitive difficulties, low attention level, poor selective attention, inadequate allocation of attention, low memory ability, and obvious motor and perceptual disorders [3]. The compensatory and plasticity of brain is stronger than that of other organs, and its compensatory and plasticity can be defined as the ability of brain to change its own function and result [4]. Moreover, the plasticity of the brain gradually decreases with the growth of age [5]. As children are in the vigorous stage of growth and development at this stage, their brain plasticity and compensation are much stronger than that of adults [6]. Moreover, children with intellectual disabilities are underdeveloped or retarded, rather than terminated. Excluding children with genetic metabolic diseases, early, active and effective combined treatment can make rapid progress.

The deficiency of liver and kidney, deficiency of heart and spleen are the main syndrome types of intellectual development disorder. Traditional Chinese medicine says that "the main bone of kidney generates pulp through the brain, the brain is the pulp sea", "the pulp sea is empty, wisdom is deficient". According to this theory, this study applied the special preparation of Guilu Congnao in our hospital combined with acupuncture to tonify the liver and kidney, enrich the essence and fill the pulp, and qizhi Congnao to treat the children with the syndrome of deficiency of liver and kidney with mental development disorder. The research methods are as follows:

## 1. Data and methods

### 1.1 General Information

From July 2021 to October 2022, 60 children with mental retardation syndrome of liver and kidney insufficiency were selected from 9 Department of Encephalopathy, Xi'an Hospital of Traditional

Chinese Medicine Affiliated to Shaanxi University of Chinese Medicine, and divided into 2 groups according to random number table method. In the treatment group, 30 patients ranged in age from 3.2 to 7.7 years, with an average age of 4.8 years. In the control group, 30 patients ranged in age from 3.3 to 7.6 years, with an average age of 4.9 years.  $P < 0.05$ , there was no statistical significance between the two groups.

### **1.2 Diagnostic Criteria**

Diagnostic criteria of Western Medicine [7] : (1) Intellectual disability, that is, IQ (IQ) is 2 standard deviations lower than the average level of the population, the general IQ is less than 75 or 70; (2) lack of adaptability; (3) Onset of the disease from the age of development, i.e. under 18 years of age.

TCM diagnostic criteria [8] : unexcited, stunted growth, short stature, wide temporal portal, slow movement, weak muscles and bones, stiff or paralyzed limbs, easy to panic, restless sleeping at night, pale complexion, pale or red tongue, little moss, deep and fine pulse, light fingerprint.

### **1.3 Inclusion Criteria**

(1) Meet the above diagnostic criteria of Chinese and Western medicine; (2) From 3 to 8 years old, family members and children can cooperate with this treatment study and sign relevant informed consent; (3) This study was approved by the Medical Ethics Committee of the hospital.

### **1.4 Exclusion Criteria**

(1) Patients with serious functional diseases such as heart, liver, lung and kidney, epilepsy, mental abnormalities, genetic metabolic diseases; (2) Family members and children cannot cooperate to complete the whole process of the study; (3) Exclude other subjects who have been admitted.

## **2 Treatment Methods**

### **2.1 Control Group**

Comprehensive rehabilitation training: (1) speech therapy, (2) sensory integration therapy; (3) Physical therapy; (4) fine motor; (5) homework treatment. 5 times/week, 30min each time. The rehabilitation training lasted 12 weeks.

### **2.2 Treatment Group**

Gulumcongnao granules combined with acupuncture therapy, combined with rehabilitation training.

#### **2.2.1 Acupuncture Therapy**

Acupuncture: mainly head needle;

Main points: Three acupuncture points of wisdom, four acupuncture points of God, three temporal acupuncture points, three brain acupuncture points, Baihui Point, Yintang point;

Matching points: Ganshu, Shenshu, Geshu, Shenmen, Zhongwan, Zusanli, Taixi, Sanyinjiao, Fenglong, etc.

Procedure: (1) After the head needle was located and routinely disinfected, a 1-inch millimeter needle was used to puncture the aponeurosis along the cap, and the needle was left for 30 minutes. (2) The limbs were routinely disinfected after the location of acupoints. The 1.5 inch millimeter needle was cut into the needle, and no needle was left after 3min of twisting and repairing; The children were treated with acupuncture 3-5 times a week and observed for 12 weeks.

#### **2.2.2 Drug Therapy**

Medicinal composition of Kulu Congnao Granules: turtle version gum 6g, deer horn gum 6g, cooked Rehmannia 9g, Cornus officinalis meat 12g, Fu Shen 9g, yam 12g, wolfberry 9g, solomon's seal 6g, Rhizoma alismatis 9g, Danpi 9g, Polygala tenuifolia 6g, Acorus tatarinowii 6g. This prescription consists of Zuogui Wan (" Jingyue Complete Book ") plus or minus, filled with warm boiling water, half a bag once for children under five years old, one bag once for children over five

years old, 3 times a day, continuous 3 months, during which time stop taking other drugs. The changes of the children's condition were observed.

**3. Efficacy Evaluation**

The Chinese revised Wechsler Intelligence Scale for Children (C-WISC) was adopted. The improvement rate of IQ score (Nimodipine method) was calculated to evaluate the efficacy. Obvious effect: increase rate of IQ score  $\geq 30\%$ ; Effective: increase rate of IQ score  $\geq 10\%$ ; Ineffective:  $< 10\%$  increase in IQ score.

**4. Statistical Analysis**

SPSS22.0 software was used for statistical analysis, measurement data were expressed with (mean  $\pm$  standard deviation), and T test was used,  $P < 0.05$  was considered statistically significant.

**5. Results**

**5.1 The Scores of the Two Groups Before and after Treatment were All Measured Data, as Shown in Table 1.**

Table 1: Comparison of WISC scores before and after treatment between the two groups (score,  $X \pm S$ )

Group	Number of cases	Before treatment	After treatment
Control group	30	76.63 $\pm$ 28.23	81.10 $\pm$ 25.21
Treat group	30	76.24 $\pm$ 26.77	95.69 $\pm$ 20.13 a

$P < 0.05$  compared with the control group, the difference was statistically significant.

**5.2 Comparison of Clinical Efficacy as Shown in Table 2.**

Table 2: The total effective rate of the two groups after 3 months of treatment was compared.

Group	Number of cases	Apparent effect	Effective	Inffective	Total effective rate
Control group	30	4	14	12	18(60.00)
Treatment group	30	12	14	4	26(86.66)a

The results were statistically significant compared with the control group ( $\chi^2 = 7.18$ ,  $P < 0.05$ ).

**5.3 Pie Charts of Effective Rates of The Two Groups after 3 Months of Treatment as Shown in Figure 1 and Figure 2.**

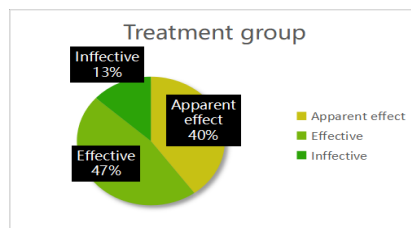


Figure 1: Pie charts of Effective rate of treatment group

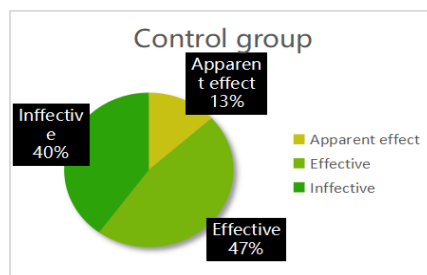


Figure 2: Pie charts of Effective rate of control group

## 6. Discussion

Mental retardation, or low intelligence, is a developmental disorder in which intelligence and socially adaptive behavior are significantly below the average level. It occurs before the age of 18. At present, studies have confirmed that 90% of the causes of intellectual development disorders are biomedical factors, about 10% are socio-psychological and cultural factors, 30% are related to genetic factors, and about 70% are related to non-genetic factors such as parents, perinatal factors and environment [9]. Its pathogenesis is related to brain injury, brain necrosis, brain edema, synaptic plasticity, trace elements and free radical abnormalities caused by neurotransmitter, neuron structure and neuron nutrition metabolism abnormalities. Now the main clinical rehabilitation training to treat intellectual development disorders, early intervention is particularly important. Early intervention is carried out according to the theory of neuroplasticity and epigenetics. Neuroplasticity means that the brain has the characteristic of changing structure and function to adapt to changes in internal and external environment, which is characterized by modification and compensation, and can repair damaged brain cells and form new neural circuits. Early intervention can be carried out by giving and appropriate stimulation in the critical period of brain development. Promote the repair and functional recovery of the damaged brain [10].

According to traditional Chinese medicine, this disease is caused by congenital deficiency, acquired dysplasia, deficiency of kidney essence, and dysplasia of the pulp sea. Or due to premature delivery, dystocia and acquired improper recuperation, qi deficiency and blood weakness, phlegm stasis and so on, from the liver and kidney, heart and kidney, phlegm and blood stasis and other aspects of consideration. Clinically, deficiency of liver and kidney syndrome is more common, kidney is congenital, the main bone marrow, filled in the brain, for the growth of this, lack of kidney essence, the pulp sea empty, brain displacement, then god, will, spirit, thinking and so on have no basis and see slow response, slow language, intelligence, dull expression, no spirit; Kidney main bone marrow, the main growth and development, lack of kidney essence, bone marrow loss in the treatment of growth retardation, muscle and bone wilt and other symptoms; Weak tongue, less moss, thin and weak pulse are the symptoms of insufficient kidney and blood. And liver and kidney homology, the main tendon blood storage, the main soul, out of planning, kidney essence deficiency, liver displacement, liver blood generation of passive, blood does not nourish the brain, deafness, thinking disorder, then see spirit lax, low intelligence, tongue light less, pulse fine number, this disease with congenital deficiency, kidney essence deficiency, pulp sea loss as the basic pathogenesis, treatment to supplement liver and kidney, Yijing fill pulp, Qizhi Cong brain method, Guilu Congnao granules, which have been used in our hospital for a long time, have good effects of tonifying liver and kidney, invigorating essence and filling marrow, enlightening wisdom and sonifying brain, and are suitable for children with mental disorders of deficiency of liver and kidney. In the turtle deer two glue for flesh and blood sentient products, two glue force, Tongren Du two veins, Yi Jing filled pulp, a total of Jun medicine. The flesh of *Cornus officinalis* nourishes the kidney, astringent the kidney and strengthens the kidney, yam strengthens the spleen and strengthens the kidney, and invigorates the essence as the minister medicine, the Danpi purifies the floating fire of the liver, purifies the kidney. wolfberry and solomon's seal enhance the function of invigorating the kidney and nourishing the essence, the Fu Shen, the Yuzhi and calamus share the function of invigorating the heart and spleen, communicating the heart and kidney, calming the heart and calming the mind, treating the heart, the spleen and the kidney together, facilitating the function of invigorating the pulp and nourishing the brain.

In this study, acupuncture was mainly performed at acupoints on the head (The location of acupoints is shown in Figure 3), and three acupuncture needles were selected for wisdom, brain, and temporal acupuncture (the first needle was placed two inches from the tip of the ear into the hairline, and the second and third needles were placed one inch at each side of the front and back of the acupuncture) to stimulate the brain. The projection area of the cerebral cortex was the area in charge of thinking, memory, and cognition, and the acupuncture could promote blood circulation and improve tissue metabolism. Recovery of cognitive function [11]. Four Shen needles (1.5 inches around Baihui point), Baihui point and Yintang point can open the body and wake up the mind, improve the brain and puzzle. Acupuncture can promote the circulation of the brain and stimulate the function of the cortex in this area, so as to repair the damaged cerebral nerves [12]. When combined with Ganshu, Shenshu and Taixi, it can play the role of tonifying liver and kidney and regulating liver and kidney function. With Shenmen, Neiguan, Zusanli, Sanyinjiao, can calm the heart and calm the mind, dredging meridians, overall regulation to treat complications.

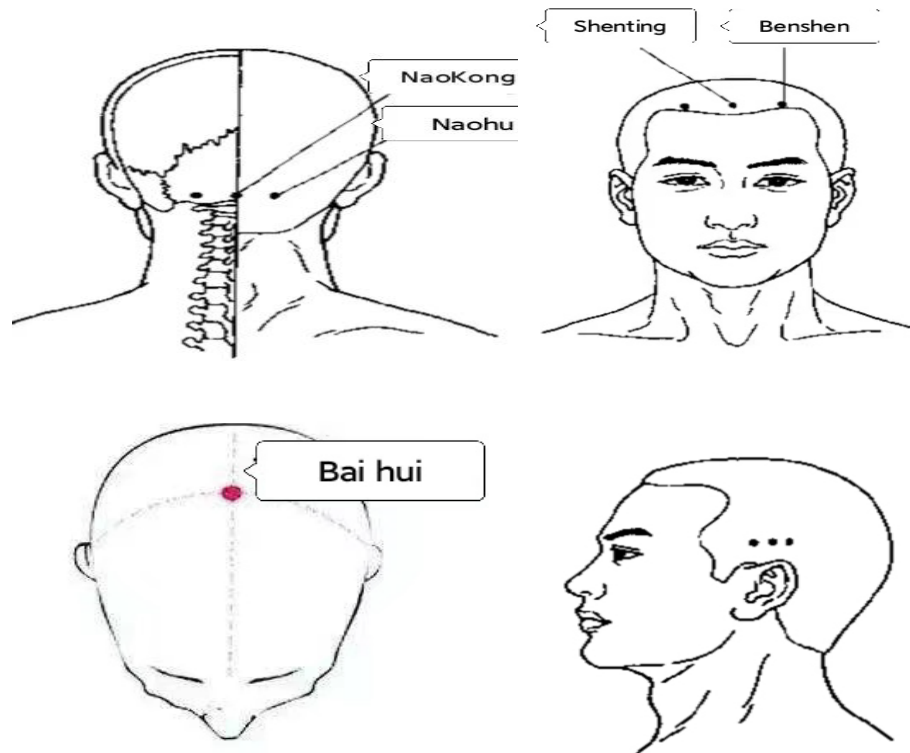


Figure 3: Acupoint location map

Mental retardation is a chronic and intractable disease with complex etiology. It is difficult to treat and has a high disability rate. In the process of clinical diagnosis and treatment, we found that the older the children, the more serious the disease, the more complications, the worse the curative effect and prognosis, and vice versa. Therefore, this study specially selected children under 8 years old as the object of observation, and conducted in-depth research on them. Currently, there is a lack of standardized and reasonable treatment plans for the treatment of different syndrome types of intellectual developmental disorders. Our department has achieved good results in the treatment of children with mental developmental disorder of liver and kidney deficiency, which is worth further research, summary and promotion.

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