

Clinical Research on Treating Senile Dementia by Combining Acupuncture with Acupoint-Injection

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Abstract: Combining: Combining acupuncture with acupoint-injection of aceglutamidi has been used in treating 38 cases of senile dementia. The experiment showed that the therapy is effective for the cases of multi-infarct dementia, the rate of success being 42.82% and of improvement 42.86%. The rating was based on the revised Hasegawa Dementia Scale and the Functional Activity Questionnaire. In addition, it has been observed that the component of high density lipid-cholesterol increased (HDL-C) significantly after treatment.

Key Words: Acupuncture, acupoint-injection, aceglutamidi, senile dementia, multi-infarct dementia, high density lipid-cholesterol (HDL-C)

Senile dementia, its main types being Alzheimer's disease (senile dementia of Alzheimer's type, SDAT) and multi-infarct dementia (MID), is a special disease found only in the aged. IT is characterized by impaired memory and intellectual decline. Being unable to take care of themselves, patients suffering from severe dementia are a heavy burden to the family and community. With the increased proportion of aged people among the populace, the morbidity of senile dementia has also increased. Therefore the disease has been listed as one of the most important items in the research of geriatrics. Beginning from 1988, we tried to combine acupuncture with acupoint-injection of aceglutamidi to treat 38 cases of senile dementia. Having analyzed the clinical data, we found the multi-infarct dementia is an effective indication of acupuncture. The observation is as the follows.

Clinical Data

1. General data

All the 38 cases (23 male and 15 female) were treated in the out-patient department. They were between 55 and 83 years old, their average age being 68 ± 7 , and their case history ranged from one month to ten years, averaging 26 ± 23 months.

32 cases were examined by Computerized Tomography (CT) or Magnetic Reasonable Imaging (MRI) which showed brain atrophy in 16 of them, multi-infarction (located respectively in the cortex, subcortical white matter and basal ganglia) in 11 and local small infarction (localized respectively in the right frontal, vertex lobe and inner capsule) in 5. Among the remaining 6 who were not scanned by CT or MRI, 3 had a history of stroke.

2. The criteria for diagnosis

The criteria ⁽¹⁾ set in the third edition of The Diagnosis and Statistical Manual (DSM-III) of the American Psychiatric Association was used in the research.

- A. A deterioration of previously acquired intellectual abilities of sufficient severity to interfere with social or occupational functioning.
- B. Memory impairment.
- C. At least two of the following: impairment of abstract thinking; other cognitive deficits such as impaired calculation, apraxia, or anomia; impairment in judgment; impairment in impulse control; personality change.
- D. Evidence from physical exam, laboratory tests, or history of a specific organic factor that is judged to be etiologically related to the disturbance.

3. Criteria for differentiating MID from SDAT

The Hachinski Ischemic Score (IS) ⁽²⁾ was applied that is based on such clinical features as a sudden onset, a stepwise deterioration, a fluctuated deterioration course, a confusion of consciousness at night, a relative conservation of personality, a depressive state, a body disorder, a fragile thymia, a case history of hypertension or stroke, presence of arteriosclerosis and focal neurologic symptoms and signs. If the score is less than 4, the diagnosis meets SDAT; and if the score is more than 7, the diagnosis meets MID. Hence, there were 17 cases of SDAT and 21 cases of MID.

4. Criteria for the grading of dementia

Slight: Obvious waning of memory; HDS ranging from 21.5 to 29.5; presence of brain asthenia symptoms. (Among the 38 under observation, 5 were graded as SDAT and 9, MID)

Medium: Complete dementia with social activity relatively retained and intelligence score ranging from 10.5 to 21.4. (There were 16 cases of medium dementia, 8 cases of SDAT and 8 MID)

Severe: Complete dementia with social activity function badly affected and intelligence score ranging from 0 to 10.4. (There were 8 cases of severe dementia, 4 cases being SDAT and 4 MID)

Materials & Methods

The acupoints chosen for needling were mainly in the Governor Vessel, such as Baihui (GV 20), Naohu (GV 17), Shuigou (GV 26), etc., and aceglutamidi was injected into such tonic points as Dazhui (GV 14), Ganshu (BL 18), Shenshu (BL 23), Zusanli (ST 36), etc.

As a rule, acupoint-injection came after acupuncture treatment. The acupuncture needles were retained in the chosen acupoints for twenty minutes. For injection, only one ml of aceglutamidi was needed. The patients were treated every other day, each course being fifteen sessions. And the results were observed after three courses.

Results of Treatment

1. Criteria for evaluation

Excellent: The HDS score increased by two grades or approached normal and the FAQ also approached normal on the whole.

Effective: The HDS score increased by one grade, and the FAQ increased to a considerable degree.

Improved: The HDS or the FAQ score improved to a certain degree and a general improvement was observed about the symptoms.

Ineffective: No improvement was seen in either the HDS or the FAQ score.

2. Effects of treatment

In the SDAT group, improvement was seen in 7 cases (35.29%), and 10 cases showed no response (64.71%), the rate of improvement being 35.29%.

In the MID group, treatment proved excellent in 2 cases (9.52%), effective in 7 cases (33.3%); 9 cases showed improved (42.86%) and 3 cases no response (14.29%), the total effective rate being 42.82%.

3. Observation before and after treatment

1) The Hasegawa Dementia Scale (the full mark being 31.5)

20 elderly men and women with normal intelligence and mental functions were chosen as the control group, their average age being 69 ± 5 . The average age of the SDAT group was 67 ± 7 and that of the MID group 69 ± 6 .

Table 1: Changes in the HDS Score

	Control Group	SDAT Group	MID Group
Before Treatment	30.1 \pm 1.82	14.71 \pm 8.32	19.07 \pm 6.99
After Treatment		15.47 \pm 9.05	22.83 \pm 6.59

Marked difference existed in the HDS score between the control group and the dementia groups before treatment. Obviously in the SDAT group there was no meaningful difference before and after treatment ($P > 0.05$) whereas the HDS score of the patients in the MID group went up greatly after treatment ($P < 0.001$).

2) The Functional Activity Questionnaire (Score ranging from 0 to 30, zero being normal)

Significant difference existed between the control group and the dementia groups before treatment. In the SDAT group there was no meaningful difference before and after treatment ($P > 0.05$) whereas in the MID group the FAQ score changed significantly after treatment ($P < 0.01$).

Table 2: Changes in the FAQ Scores

	Control Group	SDAT Group	MID Group
Before Treatment	0.5±0.89	18.59±9.12	15.57±8.18
After Treatment		17.59±9.10	12.48±8.36

3) Observations of the symptoms (See tables 3 – 5)

From Table 3 to 5:

A: number of cases

B: number of cases cured

C: number of cases having improved

D: number of ineffective cases

E: efficacy rate

Table 3: Symptoms of Body Disorders

	SDAT					MID				
	A	B	C	D	E (%)	A	B	C	D	E (%)
Vertigo	7	4	2	1	88.71%	11	9	2	0	100%
Tinnitus	9	4	2	3	66.67%	9	7	1	1	88.89%
Headache	7	2	2	3	57.14%	9	6	2	1	88.89%
Visual disturbance	6	1	1	4	33.33%	10	3	2	5	50%

Table 4: Symptoms of Dysgnosia

	SDAT					MID				
	A	B	C	D	E (%)	A	B	C	D	E (%)
Poor concentration	14	2	4	8	42.86%	19	8	5	6	68.42%
Reduced vigilance	7	2	1	4	42.86%	8	5	1	2	75%
Impaired memory	17	1	2	14	17.65%	21	1	16	4	80.95%
Reduced efficiency	15	0	1	14	6.67%	17	8	5	4	76.47%

Table 5: Symptoms of Mental & Emotional Abnormalities

	SDAT					MID				
	A	B	C	D	E (%)	A	B	C	D	E (%)
Mood depression	7	0	2	5	28.57%	11	3	3	5	54.55%
Change of temperament	8	0	5	3	62.5%	17	5	8	4	76.47%
Lack of self-care	4	0	0	4	0	4	0	3	1	75%
Ignoring environment	5	2	0	3	40%	4	2	0	2	50%

4) Changes in the blood lipid

The solution of blood lipid in the SDAT group was found to be within normal range. Before treatment the high density lipid-cholesterol (HDL-C) in the MID group was markedly lower than normal, but it increased significantly after treatment (P<0.001).

Table 6: Changes in the Blood Lipid

	SDAT	BT	MID AT	P Value
Cholesterol (mmol/L)	5.08±1.10	5.26±1.15	5.17±1.10	> 0.05
Triglyceride (mmol/L)	1.20±0.55	1.72±1.46	1.55±0.59	> 0.05
β-lipoprotein (mmol/L)	6.37±1.66	8.02±2.20	6.63±2.19	> 0.05
HDL-C (mmol/L)	1.48±0.21	0.96±0.26	1.29±0.42	< 0.001

* BT: before treatment AT: after treatment

Discussion

1. About dementia

Dementia is characterized by intellectual decline. People over sixty years of age who are afflicted with senile dementia show an overall decline of their mental function, including a severe decline of cognition, memory, abstract and initiative thinking due to organic disorder in the brain or constant metabolism damage. As a result of the growing portion of the aged people in world population, the number of senile dementia cases has increased considerably. Statistics show that the morbidity of senile dementia in China accounts for 2.81% of the people who are over sixty, and the rate tends to increase.⁽⁵⁾ Clinical experience has revealed that dementia can be caused by different factors. Among dementia cases, the most frequently encountered are Alzheimer's diseases (SDAT) and cerebrovascular dementia, i.e., multi-infarct dementia (MID). Diagnosis show that these two accounts for 80 – 90% of dementia cases. According to WHO statistics, SDAT accounts for 50 – 60% and MID accounts for 15% and the combination of SDAT and MID accounts for 10%.⁽⁶⁾ In China the proportion of MID is overwhelming.

Usually SDAT afflicts the patients in the last stage of his life, its symptoms being slow, continuous intellectual decline and personality change, and an overall disturbance in judgment, sense, reorganization, memory and emotion. Brain CT scan shows enlargement of brain ventricles, wide gyrus and wide brain channel and atrophy in the cerebral cortex. MID bears such evidence as body arteriosclerosis, a history of recurrent transient ischemic attack (TIA) or ill-treated hypertension, severe moral disturbances. The disease often accompanied by focal neurologic signs can be severe or slight at different time. And the brain CT scan shows multiple cerebral infarctions with small foci.

Hachinski Ischemic Score is helpful for distinguishing the two main senile dementia cases clinically.

2. About the acupuncture treatment or dementia

In traditional Chinese medicine, the terms “Jian Wang (amnesia)” and “Dian Zheng (depressive psychosis syndrome)” have appeared in different volumes wherein the symptoms described are similar to those of dementia cases. The records of Emperor's Cannon of Medicine indicated that the brain is a sea of marrow and deficiency of the brain leads to vertigo and dizziness. Li Shizhen (1518- 1593) of the Ming Dynasty

clearly explained that the human brain is the place of the mind. In the Qing Dynasty, Wang Qingren (1768- 1831) in the book *Revision of Medical Classics* advanced the theory that memory impairment in the aged is due to deficiency of brain marrow. According to traditional Chinese medicine, the etiology of the disease is attributed to deficiency of kidney-essence in the aged, as a result of which the kidney-essence and kidney Qi cannot go upward to nourish the brain. In the mean time, owing to the phlegm stagnation and blood stasis, blocks in the brain are formed and in due course, spiritual disturbance and other pathological symptoms will follow.

According to the traditional meridian theory, the Governor Vessel goes upward to vertex and enters the brain. So the acupoints of Baihui (GV 20) and Shuigou (GV 26) should be selected. According to traditional etiology, Ganshu (BL 18), Shenshu (BL 23) and Zusanli (ST 36) should be selected to invigorate the liver, kidney and to tonify the vital energy. Omura reported that acupuncture improves not only local circulation but also brain circulation.^(7, 8) Another experiments show that acupuncture on certain specific acupoints in the head region of the Governor Vessel may activate the cerebral cortex function. Acegulutamidi solution injected into such acupoints can go through the blood-brain barrier, improve the cerebral tissue metabolism as well as brain function, and maintain its good excitable function.

3. Summary of this clinical trial

Hitherto, there have been no reports at home and abroad concerning treating senile dementia by acupuncture combined acupoint-injection. However, it has been reported that application of tabellae prytioli to treat SDAT has scored an improvement rate of 27% and the application of amantadine to treat MID has scored an efficacy rate of 43%.^(9, 10)

In this clinical trial, the prevalent intelligence scales were adopted together with brain CT scan or MRI to grasp the diagnosis. After three month's acupuncture treatment, it was found that the improvement rate of the SDAT was 35.29%. In the MID group the efficacy rate was 42.85%. And here lies the significant difference between the two groups. In the MID group, it was discovered that HDL-C component had been raised obviously with acupoint-injection in treating multi-infarct dementia is convincing. Hence, multi-infarct dementia can be listed as an effective indication of acupuncture.

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