

## Research of complementary electroacupuncture on treating Parkinson's Disease

Dr. Yong Huang  
TCM School, Southern Medical University  
Guangzhou, China

### Dr. Yong Huang

- 2006-now: Prof. & Chief Physician, tutor for Ph.D candidate, Southern Medical University
- 2003-2006: Associate professor, tutor for Master candidate, Southern Medical University (First Military Medical University)
- 2003-2005: Postdoctoral researcher, Guangzhou TCM University
- 1995-2003: Lecturer/Attending Physician, First Military Medical University
- 1984-1995: B.Med; M.Med; Ph.D; Chengdu TCM University
- [nanfangleihuang@163.com](mailto:nanfangleihuang@163.com)



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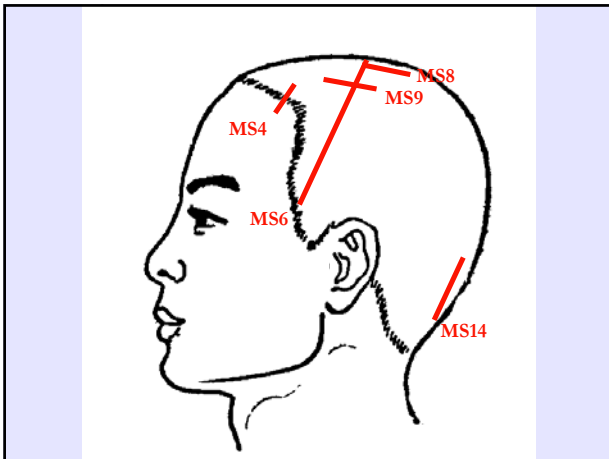
### Parkinson's disease (PD)

- Cardinal signs of PD: resting tremor, stooped posture, festinating gait, muscular rigidity and akinesia
- "Tremor Syndrome" in TCM: deficiency of liver and kidney, interior liver wind, disturbing the meridians of limbs

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### Acupoints Prescription

- MS 6 (anterior oblique line of vertex - temple): abnormal movement of the opposite limbs
- MS 4 (lateral III line on forehead): liver and kidney
- MS 8 (lateral I line of the vertex): disease of the opposite lower limbs
- MS 9 (lateral II line of the vertex): disease of the opposite upper limbs
- MS 14 (lower-lateral line of the occiput): disequilibrium



### Treatment Method

- Complementary acupuncture treatment
- G6805-II electric machine stimulates MS6 with continuous wave, 50Hz, 2-4mA
- 30 minutes, 1 time a day, 6 days followed by one day of rest, all for 5 weeks
- Basic treatment: Madopa, 125mg or 250mg, 5 weeks

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### Part I Clinical Observation

- Treatment group: Madopa + electroacupuncture
- Control group: Madopa
- Webster / UPDRS (motor part) Scales
- Curative efficacy based on Webster scores  
 $\text{Reduced score rate} = \frac{(\text{total score before tr.} - \text{total score after tr.})}{\text{total score before tr.}} \times 100\%$   
**Obvious Efficacy: the improvement 50 - 90%**  
**Efficacy: 20 - 49%**  
**No efficacy: <20%**

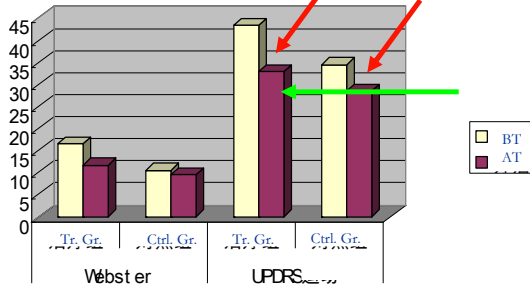
### Subjects

Groups	N (m/f)	Ages	Disease course (y)	H-R grade
Tr.	15 (7/8)	65.60±3.78	5.40±1.75	2.20±0.34
Ctrl.	15 (6/9)	60.80±3.63	6.4±2.14	2.00±0.32

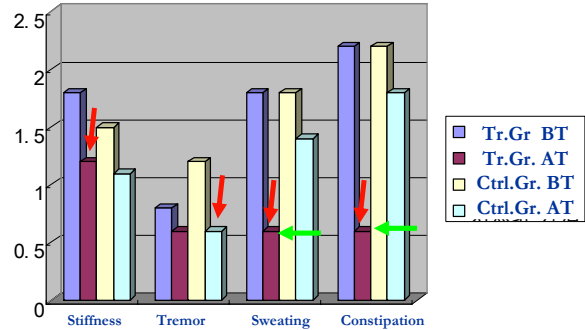
### Result(1): The efficacy based on Webster assessment

Groups	n	Obvious Efficacy	Efficacy	No Efficacy	Efficacy Rate(%)
Tr.	15	3	9	3	80.0
Ctrl.	15	3	7	5	66.6

**Result(2): The total scores of Webster / UPDRS (motor part) assessment**



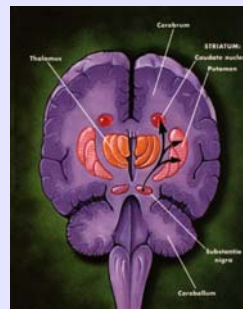
**Result(3): The improvement of the signs**



**Conclusion**

- Madopa could improve motor dysfunction and stiffness of PD patients
- The complementary acupuncture could improve the motor dysfunction of PD patients, and was good at correcting the signs of sweating and constipation
- Acupuncture had the trend of improving the curative effect of PD

**Part II SPECT study on Basal Ganglion DAT**



Dopamine transporter (DAT), a protein in the presynaptic membrane on the terminal of dopaminergic projections, plays a critical role in the regulation of the extra-cellular dopamine concentration and has been considered a marker of dopamine terminal innervations.

**Subjects**

Groups	N (m/f)	Ages	Disease course (y)	H-R grade
Tr.	5 (3/2)	65.60±8.47	5.40±1.67	2.20±0.76
Ctrl.	5 (2/3)	56.80±12.60	6.80±4.92	2.00±0.71

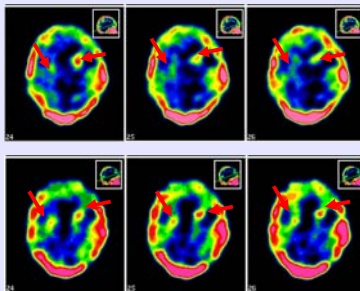
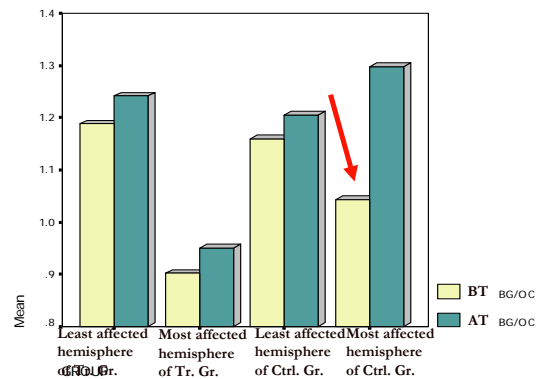
**Observe Method**

- The grouping and treatment were the same with Part I
- Observe the DAT activity of basal ganglia ( BG ) of PD by single photon emission computer tomography (SPECT) before and after respective treatment
- activities of DAT were analyzed by the ratio of basal ganglia/occipital lobe (BG/OC)

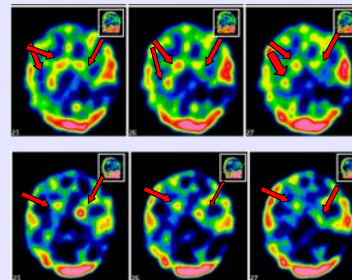


**SPECT scan**

**Result: The changes of DAT activities (BG/OC)**



- Female, 75, 7 years disease course, Hoehn-Yahr grade 1.5
- Upper line: before treatment of Tr. Gr.
- Lower line: after treatment of Tr. Gr.
- Left side: most affected side
- Right side: least affected side



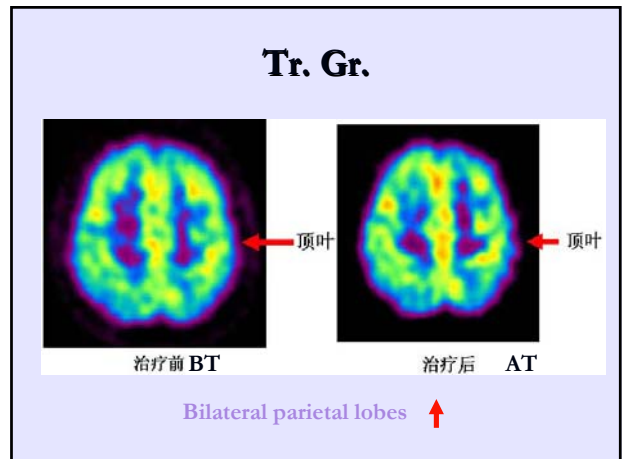
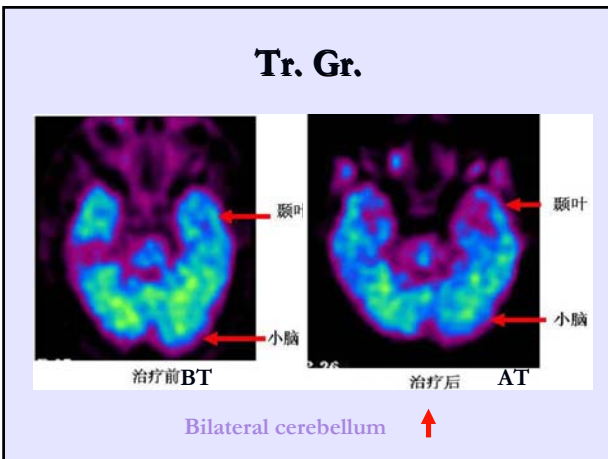
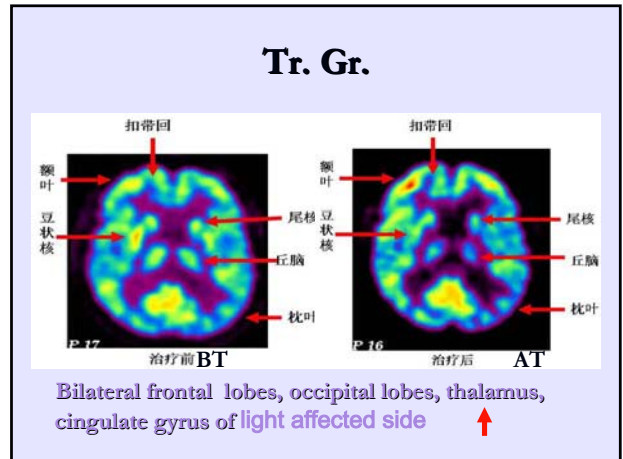
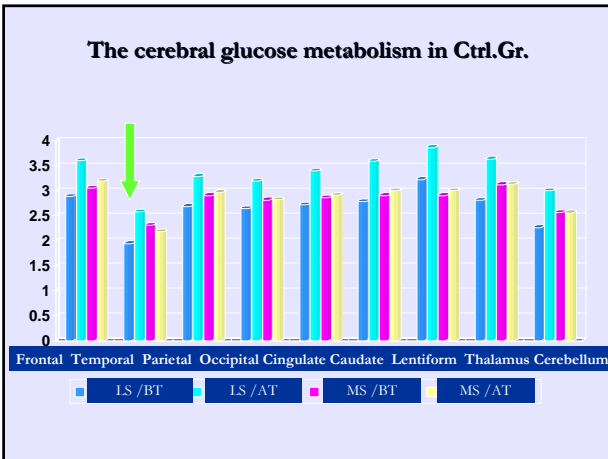
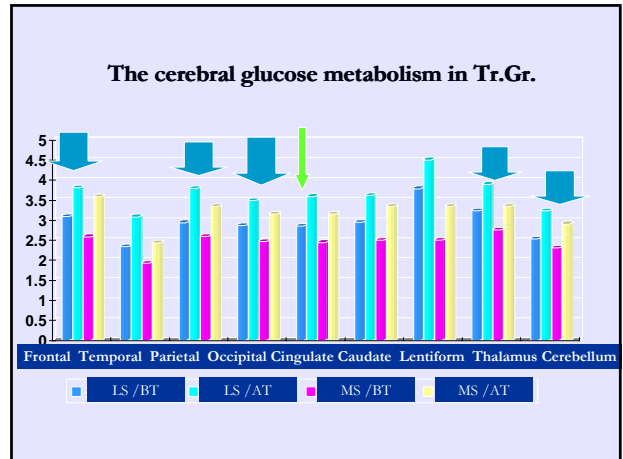
- Female, 40, 1 year disease course, Hoehn-Yahr grade 1
- Upper line: before treatment of Ctrl. Gr.
- Lower line: after treatment of Ctrl. Gr.
- Left side: most affected side
- Right side: least affected side

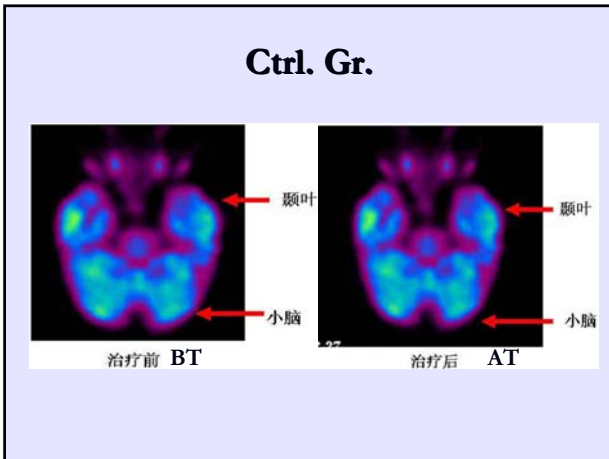
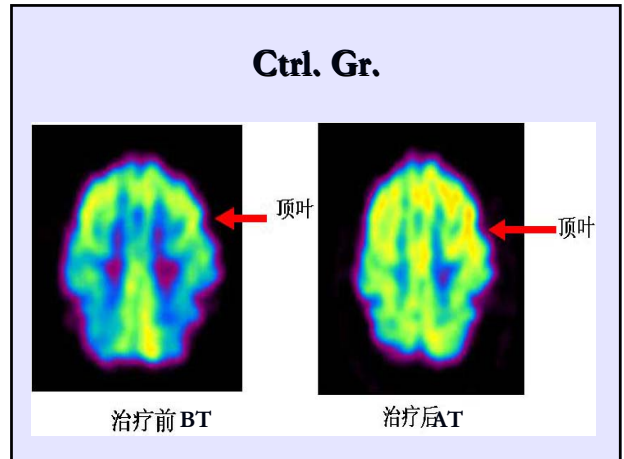
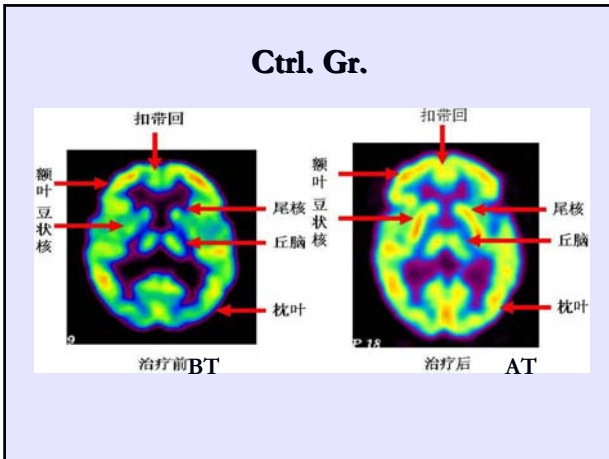
**Conclusion**

- Madopa could improve cerebral DAT activity of PD patients
- The activity of cerebral DAT had the increasing trend by the treatment of complementary acupuncture

**Part III PET study on cerebral glucose metabolism**

- Subjects grouping and treatments were the same with Part II
- PET scan to detect regional cerebral glucose metabolism of PD patients before and after the different treatment
- ROIs (region of interesting): bilateral frontal lobes, temporal lobes, occipital lobes, parietal lobes, cingulate gyri, caudate nuclei, lentiform nuclei, the thalamus, and the cerebellum
- each ROI / white matter





**Conclusion**

- Madopa had not a good effect on the cerebral glucose metabolism
- Acupuncture in combination with Madopa might improve cerebral glucose metabolism in PD patients

