

INTEGRATIVE MEDICINE AS AN ALTERNATIVE APPROACH TO REDUCE FATIGUE AND INFLAMMATION IN MULTIPLE SCLEROSIS



香港中文大學醫學院
Faculty of Medicine
The Chinese University of Hong Kong

¹ANGEL NG, ⁴MARY LAM, ¹CHERYL AU, ²DORIS YUEN, ²WILLIAM CHEUNG, ²ZEVARI HUNG, ²WAI-LING LIN, ²VINCENT CHUNG, ¹ADRIAN WONG, ²JONES CHAN, ³SIMON POON, ³JOSIAH POON, ¹VINCENT MOK, ²JUSTIN WU, ¹ALEXANDER LAU



¹ Division of Neurology, Department of Medicine & Therapeutics, The Chinese University of Hong Kong;
² Hong Kong Institute of Integrative Medicine, The Chinese University of Hong Kong;
³ School of Information Technologies, The University of Sydney;
⁴ Faculty of Health, University of Technology Sydney

Introduction

- Fatigue is the most prevalent and debilitating symptom of multiple sclerosis (MS).
- Despite its high prevalence and significant impact to daily functioning and emotional well-being, MS-related fatigue remains poorly understood because of its complex and subjective nature.
- Chinese herbal medicine may help alleviate its impact and modulate the inflammation in MS.

Objective

1. To evaluate the clinical value of Chinese herbal medicine in managing MS-related fatigue;
2. To examine the inflammatory cytokine responses in MS under Chinese Medicine (CM) treatments;
3. To investigate the immunomodulatory roles of cytokines in MS

Methods

- Individuals with MS were recruited from the CU-MS registry and underwent an 8-week, open-label, prospective observational study with Chinese herbal medicine based on semi-individualized regime by CM practitioners.
- Changes in fatigue and cytokines were measured by Modified Fatigue Impact Scale (MFIS) and immunoassay at baseline and week-8 respectively.

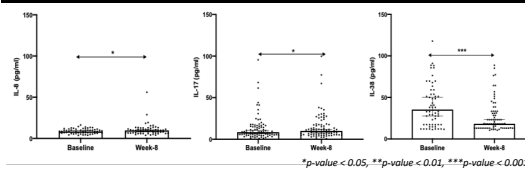
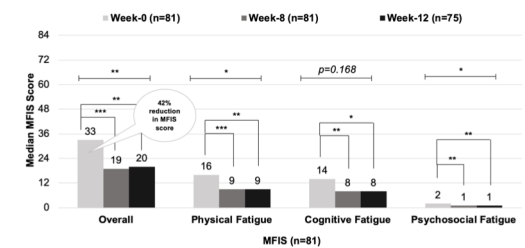
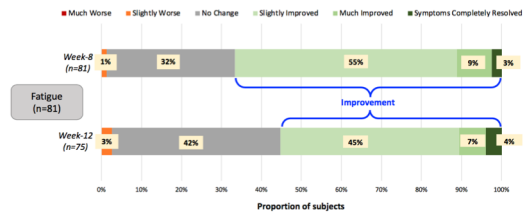
General Characteristics

Variable	All	Relapsing MS	Progressive MS	p-value*
N (%)	101	75 (74%)	26 (26%)	-
Female, N (%)	80 (79%)	63 (84%)	17 (65%)	<0.05*
Age, years, mean (SD)	38 (10)	35 (9)	46 (10)	<0.001***
Education, years, median (IQR)	14 (11-16)	15 (11-16)	11 (11-15)	<0.05*
EDSS, median (IQR)	2.5 (1.0-5.0)	1.5 (0.0-3.5)	6.0 (4.0-7.0)	<0.001***
Onset Age, years, median (IQR)	30 (24-36)	28 (23-35)	32 (28-40)	<0.05*
Disease duration, years, median (IQR)	5 (3-12)	5 (2-10)	10 (5-18)	<0.01*
DMT used				
Interferon-beta 1a, N (%)	36 (35%)	32 (43%)	4 (15%)	-
Interferon-beta 1b, N (%)	5 (5%)	3 (4%)	2 (8%)	-
Teriflunomide, N (%)	4 (4%)	3 (4%)	1 (4%)	-
Dimethyl Fumarate, N (%)	10 (10%)	8 (11%)	2 (8%)	-
Fingolimod, N (%)	19 (19%)	17 (23%)	2 (8%)	-
Azathioprine, N (%)	4 (4%)	-	4 (15%)	-
No DMTs, N (%)	23 (23%)	12 (16%)	11 (42%)	-
Modified Fatigue Impact Scale (MFIS) score				
Overall, median (IQR)	28 (10-42)	27 (11-42)	34 (8-43)	0.724
Physical, median (IQR)	14 (6-20)	13 (5-20)	18 (7-22)	0.194
Cognitive, median (IQR)	13 (1-20)	13 (1-20)	7 (0-18)	0.597
Psychosocial, median (IQR)	2 (0-4)	2 (0-4)	2 (0-5)	0.987

Note: MS: multiple sclerosis; DMT: Disease modifying therapy;
*comparison between relapsing and progressive MS;
*p-value < 0.05, **p-value < 0.01, ***p-value < 0.001.

Results

- A total of 101/108 (94%) subjects with MS (79% female, mean age 37.7+10.4 years, and mean disease duration 10.5+6.6 years) were analysed.
- Among 81 subjects who reported fatigue at baseline, two-thirds (67%) reported improvements at week-8.
- Substantial improvements in MFIS were noted after the intervention.
- There was an overall 42% reduction in median MFIS score, from 33 to 19 (p<0.01).
- Significant changes in IL-8, IL-17, and IL-38 levels from baseline to week-8 were found.
- 63% of subjects had elevated IL-8 and 58% of them had elevated IL-17 whereas 71% of subjects had reduced IL-38.
- However, these cytokine responses did not correlate with the reduction of MFIS scores among MS subjects.



Conclusion

- This study provided preliminary evidence for the safety and clinical effectiveness of Chinese herbal medicine in managing chronic symptoms of neurodegenerative diseases, including promising improvements in MS-related fatigue and reduction of inflammatory responses associated with MS.
- Reduced levels of IL-38 may be the result of Chinese herbal medicine contributing to the decreased secretion of pro-inflammatory cytokines in MS.
- The immunomodulatory effect of Chinese herbal medicine shall be further evaluated in future research.