

The Effect of Tai-Chi for arthritis (TCA) program in Osteoarthritis and Rheumatoid Arthritis Patients



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Introduction

- † Someone advocated limiting physical activity (Mills et al., 1971; Smith & Polley, 1978)
- ‡ Others had advocated exercises (Ekblom, 1982; Danneskiold-Samsøe et al., 1986)
- The role of exercise in rehabilitating remains controversial through the network analysis—were classified in six stages; resistance, bicycle, water exercise, Tai-chi, combined, aerobic-dynamic. (Lee, Suh, in press)

Introduction

Exercise is important factor in protecting joint because it provides added support to joint (Altman, 1990; Gerber, 1990)

Sometimes physical activity increase pain, referred as wear and tear arthritis (Bland & Cooper, 1984).

The balance of exercise & rest is important. Tai chi is in the middle of weight-bearing exercises from statistic exercise to dynamic exercise (Lee & Suh, in press)

Introduction

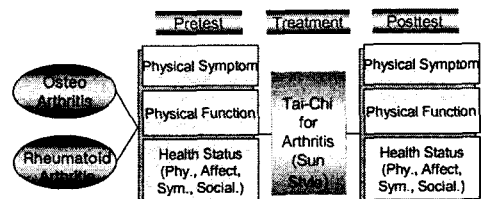
- 12 forms of Sun-style Tai-Chi for arthritis (TCA) is slow and gentle movement, isometric and isotonic with full weight-bearing.
 - pain and stiffness decreased (Song et al., 2003)
 - strength (Lan et al., 2000)
 - balance (Kevin J., 1996)
 - postural stability and coordination (Wong et al., 2001)
 - safety (Kirsteins et al., 1991)

Purpose

To investigate the effects of 12 forms of Sun-style Tai-Chi for arthritis on

- Physical Symptom (pain, tenderness, swelling, and fatigue)
- Physical Function (balance, flexibility, and grip strength)
- Health Statuses (physical, affect, symptom, social interaction)

Framework of study



Design

- ± One group pretest-posttest design
- 12 forms of Sun-style Tai-Chi
- Osteoarthritis and Rheumatoid arthritis patients

Subjects

- 24 community-dwelling participants recruited from a public health center
- Diagnosed with Rheumatoid or Osteoarthritis
- No hypertension or chronic disease
- ± Obtained subject consent and physical approval

Intervention

- The researcher- was certified as a tai chi for arthritis instructor's in Australia and Seoul in Korea
- ± TCA consisted of warm-up exercise, 12 main movement with including qigong exercise, and cool-down exercise
- Teaching the movement step by step and repeatedly for 4 weeks , twice a week, for 60min.
- 10-15set of these at a session with traditional music to help patient in a slow tempo for 2 weeks



Measurements

- ± grip strength; Lafayette instrument co.
- AIMS2(the second version of Arthritis Impact Measurement Scale) ; physical, affect, pain, work, social interaction

Result (General Character)-

Dropout rates : 12.5%

General Character		N=21(% or range)	
		RA, 6(28.6)	OA, 15(71.4)
Sex	Female	6(100)	12(80)
	male	0(0)	3(20)
Age, median (range)		46(44-51)	65(45-72)
Marital status	Married	6(100)	15(100)
	single	0(0)	0(0)
Blood Pressure	Sys.	125.17	137.73
	Dia.	80	81.14

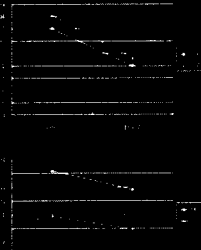
Sys.= systolic. Dia.=diastolic

General Character

Symptom-duration (years, & range)		7.7(1-16)	7.9(1-28)
Medication	No medication	0(0)	11(73.4)
	NSAID, only	0(0)	2(13.3)
	DMARD	4(66.7)	2(13.3)
	Oral steroids only	0(0)	0(0)
	DMARD+ Oral steroids	2(33.3)	0(0)

NSAID = nonsteroidal antiinflammatory drugs
DMARD = disease modifying antirheumatic drugs

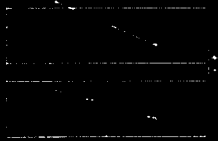
Physical Symptom



Pain:
RA, P=0.063
OA, P=0.006*

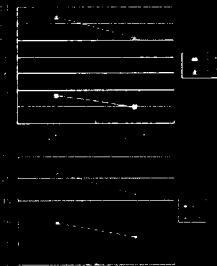
Tenderness:
RA, P=0.5
OA, P=0.032*

Physical Symptom



Swelling :
RA, P=0.066
OA, P=0.306

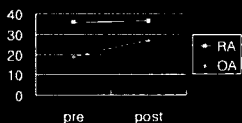
Physical Function



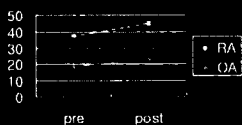
Flexibility (Rt arm up):
RA, P=0.593
OA, P=0.014*

Flexibility (Lt arm up):
RA, P=0.104
OA, P=0.003*

Physical Function

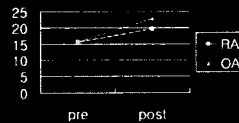


Balance (Rt foot stance) :
RA, P=0.917
OA, P=0.534

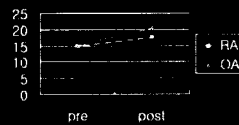


Balance (Lt foot stance) :
RA, P=0.463
OA, P=0.929

Physical Function

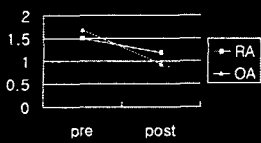


Grip Strength (Rt):
RA, P=0.08
OA, P=0.002*

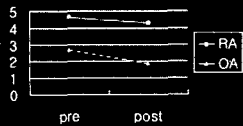


Grip Strength (Lt):
RA, P=0.225
OA, P=0.003*

AIMS2 Health Status Components

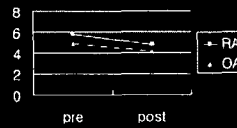


Physical HSC:
RA, P=0.115
OA, P=0.002*

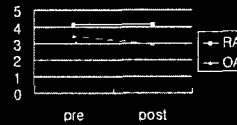


Affect HSC:
RA, P=0.916
OA, P=0.115

AIMS2 Health Status Components



Symptom (Pain):
RA, P=0.093
OA, P=0.128



Social Interaction:
RA, P=0.917
OA, P=0.025*

Phy. Sym.	RA (N=6)			OA (N=15)		
	pre	post	p	pre	post	p
Pain	7±	4±	0.063	8.1±	4.6±	0.006
VAS	3.95	2.45		3.54	3.66	
Tenderness	7.17±	5.83±	0.5	3.87±	2.93±	0.032
Swelling	3.67±	2.50±	0.066	1.27±	0.47±	0.306
Fatigue	8.67±	4.33±	0.039	8.00±	4.27±	0.013
	2.88	1.51		3.95	3.13	

Phy. Fun.	RA (N=6)			OA (N=15)		
	pre	post	p	pre	post	p
Flex.	3.33±	1.92±	0.593	12.79±	10.3±9	0.014
	5.2	3.44		11.59	5.3	
Flex.	9.67±	6.5±	0.104	21.14±	16.33±	0.003
	9.71	6.95		13.01	11.7	
Bal.	35.74±	36.54±	0.917	19.05±	27.09±	0.534
	23.71	20.84		12.85	24.69	
Bal.	37.44±	44.91±	0.463	18.78±	22.91±	0.929
	19.13	22.58		12.76	20.78	
Grip	15.60±	19.83±	0.08	15.79±	22.80±	0.002
	3.58	8.75		4.08	6.50	
Grip	15±	17.67±	0.225	15.14±	20.47±	0.003
	1.41	9.87		3.70	5.50	

AIMS2 Health Status Components

AIMS2	RA (N=6)			OA (N=15)		
	Pre	post	p	pre	post	p
Physical	1.49±	1.18±	0.115	1.68±	0.94±	0.002
	0.99	0.88		1.05	0.94	
Affect	4.63±	4.33±	0.916	2.68±	1.88±	0.115
	0.80	0.94		2.15	1.80	
Sym.	5.83±	4.75±	0.093	4.90±	4.17±	0.128
	1.78	1.91		2.18	2.29	
Social Inter.	4.15±	4.14±	0.917	3.46±	2.94±	0.025
	1.61	1.43		1.45	1.61	

Conclusions

- ± TCA program was more effective in physical symptom (pain, tenderness) than rheumatoid arthritis.
- ± TCA program was more effective in physical function (flexibility, grip strength) than rheumatoid arthritis.
- ± TCA program was more effective in health status (physic & social) than rheumatoid arthritis.

Suggestions

- Try Randomized Clinical Trial
- Recommend osteoarthritis patients to do Tai Chi exercise with community based exercise

