



Efficacy of Knee Brace in Patients with Knee Osteoarthritis



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Background

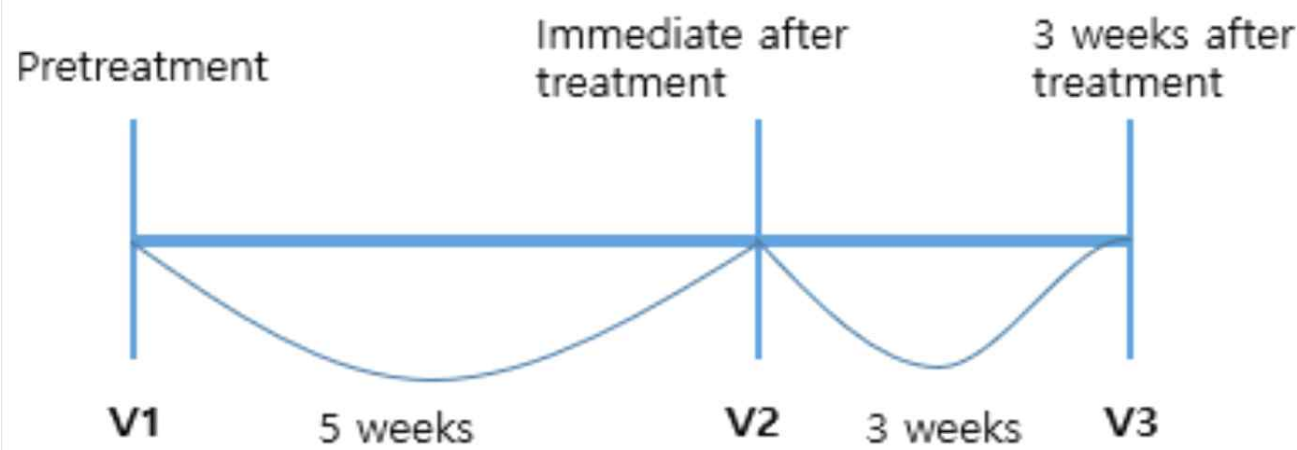
- Knee osteoarthritis(knee OA) : highly prevalent among older adults.
- Knee joint traction : effective joint space, maintain fixation, increase cartilage thickness, improve function.
- Study aim : investigate the therapeutic effects of the knee traction brace “OA Knee trac” in patients with knee OA.

Materials and method

Study Design

- Prospective randomized controlled trial. 30 Patients enrolled.
 - Inclusion criteria :
 - ✓ Age over 20 , OA patients
 - ✓ Grade 1 - 3 in Kellgren & Lawrence system (KL grade)
 - Experimental group, 15patients
 - ✓ Intervention , for 5-week
 - ✓ Wearing OA Kneetrac® during daily activity 4hrs everyday
 - Control group, 15 patients
 - ✓ Living daily life without knee brace
- Outcome measurement
 - Primary outcome :
 - ✓ Western Ontario and McMaster universities arthritis index (WOMAC) – functional scale
 - Secondary outcome
 - ✓ Visual analogue scale index (VAS)- pain
 - ✓ The 36-item short form health survey (SF-36) – physical & psychologic state

Result



Primary outcome - WOMAC

	V1	V2	V3	Time P value	Group P value	Time x Group P value
Experimental	33.47(15.97)	25.60(15.86)	18.27(14.77)	<0.001*	0.462	0.063
Control	26.47(11.89)	20.93(12.90)	18.87(14.35)			

	Experimental				Control		
Overall sig Diff Score	V1-V2	V1-V3	V2-V3	Overall sig Diff Score	V1-V2	V1-V3	V2-V3
<0.001*	7.87(5.91)	15.20(9.13)	7.33(8.38)	0.022	5.53(7.69)	7.60(11.81)	2.07(5.65)
	<0.001*	<0.001*	0.013*		0.078	0.044*	0.535

Secondary outcome - VAS

	V1	V2	V3	Time P value	Group P value	Time x Group P value
Experimental	3.5(0.83)	2.47(0.74)	2.00(0.93)	<0.001*	0.169	0.052
Control	3.60(1.50)	3.17(1.62)	2.97(1.54)			

	Experimental				Control		
Overall sig Diff Score	V1-V2	V1-V3	V2-V3	Overall sig Diff Score	V1-V2	V1-V3	V2-V3
<0.001*	1.07(0.96)	1.53(1.06)	0.47(0.52)	0.088	0.43(0.82)	0.63(1.32)	0.20(0.86)
	0.002*	<0.001*	0.011*		0.181	0.250	1.000

Secondary outcome - SF 36

	V1	V2	V3	Time P value	Group P value	Time x Group P value
Experimental	88.8(16.66)	100.6(14.13)	108.4(11.80)	0.002*	0.004*	<0.001*
Control	114.1(12.35)	111.8(12.58)	112.07(14.02)			

OA kneetrac



Result

Demographic statistics

	Experimental	Control	P-value
Age	63.80(10.02)	64(9.26)	0.764
Sex(M:F)	5:10	5:10	1.000
Height	159.27(4.77)	161.40(7.36)	0.354
Weight	62.20(7.92)	64.27(9.68)	0.527
Pain side(R:L)	11:4	9:6	0.439
Joint angle	2.06(4.04)	2.87(4.27)	0.756
	Experimental	Control	P-value
WOMAC	33.47(15.97)	26.47(11.89)	0.184
VAS	3.53(0.83)	3.60(1.50)	0.983
SF-36	88.80(16.66)	114.13(12.35)	0.001

Conclusions

- OA Kneetrac brace
 - Intra-experimental group -> Improve : WOMAC score , VAS. Aggravate : SF 36
 - Inter-group -> No significant difference