



**OBJETIVE**

The objective of this study was to perform an 8-week physical therapy program (3 sessions per week) to recover the functionality to a patient who underwent total knee arthroplasty (TKA).

**BACKGROUND**

In 2020, the osteoarthritis will be the fourth leading cause of disability worldwide<sup>1,2</sup>. Nowadays, according to the World Health Organization (WHO), it affects 80% of the population older than 65 years<sup>2,3</sup>. The treatment in advanced stages is the TKA<sup>4,5</sup>. After surgery procedure, is essential the early beginning of a program of physiotherapy to recover the physical and functional capacity of the patients<sup>6</sup>.

**RESULTS**

The physical therapy program was well tolerated with an adherence rate of 100%. There were improvements in all variables, highlighting the joint balance where were obtained ranges between 46.66-120%.

**METHODS**

A case study of TKA for secondary osteoarthritis was carried out. The variables were measured at baseline, 4, 6 and 8 weeks. This analysis was performed using percentages of change with respect to baseline assessment for the following variables: joint balance, muscle balance, circumferential data, Tinetti test, Timed Up and Go test, Flamingo test, Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC), Hospital Anxiety and Depression Scale (HADS), Visual Analogue Scale (VAS), Short Form-36 Health Survey (SF-36) and Barthel Index.

**TABLE 1** Measures and percentage of change in physical and functional tests.

Variable	Baseline	4 Weeks	6 Weeks	8 Weeks	Change from baseline to 4 weeks (%)	Change from baseline to 6 weeks (%)	Change from baseline to 8 weeks (%)
<b>Joint balance (°)</b>							
Right active flexion.	50	80	100	110	60	100	120
Right pasive flexion.	60	90	109	115	50	81.66	91.66
Right active extension. <sup>a, b</sup>	-20	-10	-5	-5	-50	-75	-75
Right pasive extension. <sup>a, b</sup>	-15	-8	-5	-5	-46.66	-66.67	-66.67
Left active flexion.	110	107	112	112	-2.73	1.81	1.81
Left pasive flexion.	124	120	122	125	-3.23	-1.62	0.81
Left active extension. <sup>a, b</sup>	-5	-5	-5	-5	0	0	0
Left pasive extension. <sup>a</sup>	0	0	0	0	0	0	0
<b>Muscle balance</b>							
Right knee flexors.	3	3	3	4	0	0	33.33
Right knee extensors.	3	3	4	4	0	33.33	33.33
Left knee flexors.	5	5	5	5	0	0	0
Left knee extensors.	5	5	5	5	0	0	0
<b>Circumferential data <sup>a</sup></b>							
4 cm above right patella. <sup>c</sup>	51	47.5	47	46	-6.86	-7.84	-9.83
Superior pole of the right patella	49	45.5	45	42.5	-7.14	-8.16	-13.27
4 cm below right patella. <sup>c</sup>	45	43.5	43	41	-3.34	-4.45	-8.89
8 cm below right patella. <sup>c</sup>	41	38.5	37	36	-6.10	-9.76	-12.20
12 cm below right patella. <sup>c</sup>	38	38	36	35.5	0	-5.26	-6.58
16 cm below right patella. <sup>c</sup>	37.5	36	35	35	-4	-6.67	-6.67
20 cm below right patella. <sup>c</sup>	35	34	34	33	-2.28	-2.28	-5.72
24 cm below right patella. <sup>c</sup>	32	32	31.5	29.5	0	-1.56	-7.81
28 cm below right patella. <sup>c</sup>	29	26	26	25	-10.35	-10.35	-13.79
32 cm below right patella. <sup>c</sup>	27	25	24.5	24	-7.41	-9.26	-11.11
4 cm above left patella. <sup>c</sup>	45	45	45	45	0	0	0
Superior pole of the left patella.	42	42	42	42	0	0	0
4 cm below left patella. <sup>c</sup>	40	40	40	40	0	0	0
8 cm below left patella. <sup>c</sup>	36	36	36	36	0	0	0
12 cm below left patella. <sup>c</sup>	35	35	35	35	0	0	0
16 cm below left patella. <sup>c</sup>	35	35	35	35	0	0	0
20 cm below left patella. <sup>c</sup>	33	33	33	33	0	0	0
24 cm below left patella. <sup>c</sup>	29	29	29	29	0	0	0
28 cm below left patella. <sup>c</sup>	25.5	25.5	25.5	25.5	0	0	0
32 cm below left patella. <sup>c</sup>	24	24	24	24	0	0	0
<b>Tinetti test</b>							
Running	6	11	11	12	83.33	83.33	100
Balance	9	14	14	16	55.55	55.55	77.77
Risk of falls	15	25	25	28	66.66	66.66	86.66
<b>TUG test (seg)<sup>a</sup></b>							
	39.87	16.46	12.74	10.39	-58.72	-68.05	-73.94
<b>Flamingo test <sup>a</sup></b>							
	6.5	6	5	3.5	-7.69	-23.08	-46.15

TUG: Timed Up and Go. <sup>a</sup> Negative percent change means improvement. <sup>b</sup> Negative joint balance knee extension means missing degrees up to full extension (0°). <sup>c</sup> The reference structure is the superior pole of the patella.

**TABLE 2** Ratings and percentage of change in self-administered questionnaires.

Variable	Baseline	4 Weeks	6 Weeks	8 Weeks	Change from baseline to 4 weeks (%)	Change from baseline to 6 weeks (%)	Change from baseline to 8 weeks (%)
<b>WOMAC Index<sup>a</sup></b>							
Pain	11	8	7	3	-27.27	-36.36	-72.73
Stiffness	4	1	1	1	-75	-75	-75
Functional capacity	40	15	11	6	-62.50	-72.50	-85
<b>HAD Scale<sup>a</sup></b>							
Anxiety	4	3	3	2	-25	-25	-50
Depression	5	6	4	1	20	-20	-80
<b>VAS knee <sup>a</sup></b>							
Right	8	7	5	3	-12.50	-37.50	-62.50
<b>Health Survey (SF-36)</b>							
Physical function	20	45	75	85	125	275	325
Physical role <sup>b</sup>	0	50	75	75	50	75	75
Body pain	22	72	74	74	227.27	236.36	236.36
General health	60	60	82	87	0	36.66	45
Vitality	80	45	65	80	-43.75	-18.75	0
Social function	12.50	50	62.50	75	300	400	500
Emotional role	100	66.67	66.67	100	-33.33	-33.33	0
Mental health	48	52	80	88	8.33	66.66	83.33
<b>Barthel Index</b>							
	85	95	100	100	11.76	17.65	17.65

WOMAC: Western Ontario and McMaster Universities Osteoarthritis Index, HAD: Hospital Anxiety and Depression Scale, VAS: Visual Analogue Scale, SF-36: Short Form-36 Health Survey. <sup>a</sup> Negative percentage of change means improvement. <sup>b</sup> This subscale is expressed in points and not as a percentage (%).

**CONCLUSIONS**

The results obtained have been beneficial. We found important improvements in all variables assessed. It has improved quality of life, functional capacity and pain. Subsequent studies would be required to approach the patterns of miofascial pain associated with this intervention due to the results found in this study.

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