

CHAPTER 4

RESULTS

Introduction

In this chapter the patient demographics and analysis of pre-operative and postoperative data is described. There were 20 patients in the control group and 16 patients in the experimental group, for collection of post-operative data, on day three or four post-THA. However due to early discharge of three patients from the control group, readings were not done for these three patients on day seven/eight post-THA. This represented a drop-out of 15% in the control group.

Demographics

In Table 4.1 and Table 4.2 the demographics of the control and experimental groups are shown.

Table 4.1 Gender of control and experimental groups' patients

Gender	Control Group n=20	Experimental Group n=16	p value
Males	4	5	0.47
Female	16	11	0.47

Distribution of gender did not differ between the control and experimental groups.

Table 4.2 Age of control and experimental groups' patients

Age (mean[SD])	Control Group n=20	Experimental Group n=16	p value
	56.5[3.11]	61.75[2.49]	0.21

Distribution of age did not differ between the control and experimental groups.

Musculoskeletal History

In Table 4.3 the musculoskeletal history of the control and experimental group's patients is shown.

Table 4.3 Musculoskeletal history of control and experimental groups

MUSCULOSKELETAL HISTORY	CONTROL GROUP N=20	EXPERIMENTAL GROUP N=16	P VALUE
Main presenting hip problem:			
Pain	17	14	p = 0.45
Stiffness	0	1	
Decreased function	3	1	
Previous injury to operated hip:			
Yes	1	3	p = 0.30
No	19	13	
General joint problems:			
Yes	13	11	p = 1.0
No	7	5	
Medication for joint problems:			
Yes	15	9	p = 0.3
No	5	7	

There were no differences between the musculoskeletal history of the control and experimental groups.

In Table 4.4 the preoperative mobility status of the control and experimental groups are shown.

Table 4.4 Preoperative mobility status of control and experimental groups

	Control Group n=20	Experimental Group n=16	p value
Walking aid used:			
Yes	19	15	p = 1.0
No	1	1	
Assistance needed to get out of bed:			
Yes	2	2	p = 1.0
No	18	14	
Assistance needed for sit to stand:			
Yes	1	2	p = 0.57
No	19	14	
Able to climb 3 step:			
Yes	16	15	p = 0.36
No	4	1	
Able to walk 4.57m:			
Yes	20	16	p = 1.0
No	0	0	

There were no differences in the mobility status between the control and experimental groups.

In Table 4.5 the operative approach used by the orthopaedic surgeon, and whether there were any postoperative complications in the control or experimental groups are shown.

Table 4.5 Operative approach and postoperative complications of control and experimental groups

	Control Group n=20	Experimental Group n=16	p value
Operative approach:			
Anterolateral	20	16	p = 1.0
Posterior	0	0	
Postoperative complications:			
Yes	3	4	p = 0.68
No	17	12	

All the patients in both the control and the experimental groups had the same operative approach used by the surgeons. There were no differences in the incidence of postoperative complications, between the control and experimental groups.

Postoperative measurements for dependent variables

In the following representation of the analysed data, two tables for each set of data will be given. The reason for this is that during the course of data collection, the author was not able to collect data from three patients from the control group on day seven/eight post operation, due to these patient's being discharged prior to day seven/eight post operation. Data of those three patients from the control group, are excluded in the first table (n=33) and then in an intention to treat analysis included in the second table for each set of data (n=36).

In Table 4.6.1 the mean range of motion of the operated hip, on the 3/4th and 7/8th day post-THA are shown (n=33). The two movements that were assessed are active hip flexion and abduction. In Table 4.6.2 the data of the three patients who dropped out from the control group, are included in the data analysis.

Table 4.6.1 Mean [SD] active hip range of movement (n=33)

	Control Group (n=17)	Experimental Group (n=16)	Differences between groups (95% CI)	p value
Flexion:				
Day 3-4 (n=33)	10[±8.57]	14.5[±12.92]	-4.5 (-12.24 to 3.24)	p = 0.24
Day 7-8 (n=33)	18.88[±12.89]	25.56[±15.68]	-6.68 (-16.85 to 3.49)	p = 0.19
Difference	8.88[±7.29]	11.06[±12.64]	-2.18 (-9.45 to 5.09)	p = 0.55
Abduction:				
Day 3-4 (n=33)	5.06[±4.59]	7[±8.58]	-1.94 (-6.78 to 2.90)	p = 0.42
Day 7-8 (n=33)	8.29[±7.8]	12.56[±7.52]	-4.27 (-9.71 to 1.18)	p = 0.12
Difference	3.24[±6.51]	5.56[±4.98]	-2.33 (-6.46 to 1.81)	p = 0.26

Table 4.6.2 Mean [SD] active hip range of movement (n=36)

	Control Group (n=20)	Experimental Group (n=16)	Differences between groups (95% CI)	p value
Flexion:				
Day 3-4 (n=36)	11.95[±12.31]	14.5[±12.9]	-2.55 (-11.13 to 6.02)	p = 0.55
Day 7-8 (n=33)	18.88[±12.89]	25.56[±15.68]	-6.68 (16.85 to 3.49)	p = 0.19
Difference	8.88[±7.29]	11.06[±12.64]	-2.18 (-9.45 to 5.09)	p = 0.55
Abduction:				
Day 3-4 (n=36)	5.3[±5.67]	7[±8.58]	-1.7 (-6.54 to 3.14)	p = 0.48
Day 7-8 (n=33)	8.29[±7.8]	12.56[±7.52]	-4.27 (-9.71 to 1.18)	p = 0.12
Difference	3.24[±6.51]	5.56[±4.98]	-2.33 (-6.46 to 1.81)	p = 0.26

There were no differences in active range of motion of the operated hip between the control and experimental groups, regarding measurements taken on the 3-4th day, 7-8th day or the differences between the two time intervals.

In Table 4.7.1 the resting pain experienced by patients in the control and experimental groups is shown (n=33). In Table 4.7.2 the data of the three patients that dropped out from the control group, are included in the data analysis.

Table 4.7.1 Mean [SD] Visual Analogue Scale scores (n=33)

VAS Scores	Control Group n=17	Experimental Group N=16	Differences between groups (95%CI)	p value
Day 3-4 (n=33)	3.24[±3.01]	3.84[±1.69]	-0.61 (-2.36 to 1.14)	p = 0.48
Day 7-8 (n=33)	1.71[±1.99]	1.56[±1.92]	0.14 (-1.25 to 1.54)	p = 0.83
Difference between day 3-4 & 7-8	-1.53[±2.27]	-2.28[±1.32]	0.75 (-0.58 to 2.08)	p = 0.26

Table 4.7.2 Mean [SD] Visual Analogue Scale scores (n=36)

VAS Scores	Control Group n=20	Experimental Group N=16	Differences between groups (95%CI)	p value
Day 3-4 (n=36)	3.25[±3.06]	3.84[±1.69]	-0.59 (-2.33 to 1.14)	p = 0.49
Day 7-8 (n=33)	1.71[±1.99]	1.56[±1.92]	0.14 (-1.25 to 1.54)	p = 0.83
Difference between day 3-4 & 7-8	-1.53[±2.27]	-2.28[±1.32]	0.75 (-0.58 to 2.08)	p = 0.26

There was no difference in the resting pain between the control and experimental groups, either on day 3-4, day 7-8 or the difference between the two time intervals.

In Table 4.8.1 the postoperative functional abilities of the control and experimental groups are shown (n=33) as a function of total scores of the ILOA Scale. In Table 4.8.2 the data of the three patients who dropped out of the study, are included in the data analysis.

Table 4.8.1 Mean [SD] total scores for ILOA Scale (n=33)

ILOA Scale Scores	Control Group (n=17)	Experimental Group (n=16)	Differences between groups (95% CI)	p value
Total				
Day 3-4 (n=33)	30.29 [±8.64]	26.88 [±11.75]	3.42 (-3.87 to 10.71)	p = 0.35
Day 7-8 (n=33)	16.59 [±6.93]	16.56 [±6.62]	0.03 (-4.79 to 4.84)	p = 0.99
Difference between day 3-4 and 7-8	-13.71 [±8.12]	-10.31 [±10.45]	-3.39 (-10.02 to 3.23)	p = 0.30

Table 4.8.2 Mean [SD] total scores for ILOA Scale (n=36)

ILOA Scale Scores	Control Group (n=20)	Experimental Group (n=16)	Differences between groups (95% CI)	p value
Total				
Day 3-4 (n=36)	30 [±8.18]	26.88 [±11.75]	3.13 (-3.63 to 9.88)	p = 0.35
Day 7-8 (n=33)	16.59 [±6.93]	16.56 [±6.62]	0.03 (-4.79 to 4.84)	p = 0.99
Difference between day 3-4 and 7-8	-13.71 [±8.12]	-10.31 [±10.45]	-3.39 (-10.02 to 3.23)	p = 0.30

There was no difference in the overall functional outcome between the control and experimental groups, either on post operative day 3-4 or day 7-8. There was also no difference between the control and experimental groups, in regard to rate of progress in the above mentioned time periods.

In Table 4.9.1 the individual tasks that make up the ILOA Scale is indicated, with the comparisons between the control and experimental groups shown (n=33). In Table 4.9.2 the data of the three patients who dropped out of the study before the seventh/eighth day postoperatively, are included in the data analysis (n=36).

Table 4.9.1 Mean [SD] individual ILOA Scale task scores (n=33)

ILOA Scale Scores	Control Group (n=17)	Experimental Group (n=16)	Differences between groups (95% CI)	p value
Supine to sit				
Day 3-4 (n=33)	1.59 [±1.12]	1.56 [±1.36]	0.26 (-0.86 to 0.91)	p = 0.95
Day 7-8 (n=33)	0.76 [±0.97]	0.63 [±0.96]	0.14 (-0.55 to 0.82)	p = 0.68
Difference between day3-4 and 7-8	0.82 [±1.33]	0.94 [±1.57]	-0.11 (-1.15 to 0.92)	p = 0.82
Sit to stand				
Day 3-4 (n=33)	3.94[±2.97]	3.63[±3.61]	0.32[-2.03 to 2.66]	p = 0.78
Day 7-8 (n=33)	0.53[±1.94]	0.69[±1.30]	-.016[-1.34 to 1.02]	p = 0.79
Difference between day 3-4 and 7-8	3.41[±2.98]	2.94[±3.47]	0.47[-1.82 to 2.77]	p = 0.68
Walk 4.57m				
Day 3-4 (n=33)	5.35[±1.93]	4.81[±1.83]	0.54[-0.80 to 1.88]	p = 0.42
Day 7-8 (n=33)	3.24[±0.66]	3.38[±0.81]	-0.14[-0.66 to 0.38]	p = 0.59
Difference between day 3-4 and 7-8	2.12[±1.83]	1.44[±1.75]	0.68[-0.59 to 1.95]	p = 0.28
Walking velocity				
Day 3-4 (n=33)	10[±2.06]	8.69[±2.89]	1.31[-0.46 to 3.09]	p = 0.14
Day 7-8 (n=33)	6.71[±2.31]	6.44[±2.42]	0.27[-1.41 to 1.95]	p = 0.75
Difference between day 3-4 and 7-8	3.29[±1.99]	2.25[±2.84]	1.04[-0.69 to 2.77]	p = 0.23
Stairs				
Day 3-4 (n=33)	9.71[±2.71]	8[±3.63]	1.71[-0.56 to 3.97]	p = 0.14
Day 7-8 (n=33)	5.35[±2.50]	5.25[±2.70]	0.10[-1.74 to 1.95]	p = 0.91
Difference between day 3-4 and 7-8	4.35[±2.91]	2.75[±3.04]	1.60[-0.51 to 3.72]	p = 0.13

Table 4.9.2 Mean [SD] individual ILOA Scale task scores (n=36)

ILOA Scale Scores	Control Group (n=20)	Experimental Group (n=16)	Differences between groups (95% CI)	p value
Supine to sit				
Day 3-4 (n=36)	1.6[±1.05]	1.56[±1.36]	0.04[-0.78 to 0.85]	p = 0.93
Day 7-8 (n=33)	0.76[±0.97]	0.63[±0.96]	0.14[-0.55 to 0.82]	p = 0.68
Difference between day3-4 and 7-8	0.82[±1.33]	0.94[±1.57]	-0.11[-1.15 to 0.92]	p = 0.82
Sit to stand				
Day 3-4 (n=36)	3.75[±2.94]	3.63[±3.61]	0.13[-2.09 to 2.34]	p = 0.91
Day 7-8 (n=33)	0.53[±1.94]	0.69[±1.30]	-0.16[-1.34 to 1.02]	p = 0.79
Difference between day 3-4 and 7-8	3.41[±2.98]	2.94[±3.47]	0.47[-1.82 to 2.77]	p = 0.68
Walk 4.57m				
Day 3-4 (n=36)	5.2[±1.85]	4.81[±1.83]	0.39[0.87 to 1.64]	p = 0.54
Day 7-8 (n=33)	3.24[±0.66]	3.38[±0.81]	-0.14[-0.66 to 0.38]	p = 0.59
Difference between day 3-4 and 7-8	2.12[±1.83]	1.44[±1.75]	0.68[-0.59 to 1.95]	p = 0.28
Walking velocity				
Day 3-4 (n=36)	9.9[±1.97]	8.69[±2.89]	1.21[-0.44 to 2.86]	p = 0.14
Day 7-8 (n=33)	6.71[±2.31]	6.44[±2.42]	0.27[-1.41 to 1.95]	p = 0.75
Difference between day 3-4 and 7-8	3.29[±1.99]	2.25[±2.84]	1.04[-0.69 to 2.77]	p = 0.23
Stairs				
Day 3-4 (n=36)	9.8[±2.53]	8[±3.63]	1.8[-0.29 to 3.89]	p = 0.09
Day 7-8 (n=33)	5.35[±2.50]	5.25[±2.70]	0.10[-1.74 to 1.95]	p = 0.91
Difference between day 3-4 and 7-8	4.35[±2.91]	2.75[±3.04]	1.60[-0.51 to 3.72]	p = 0.13

There was no difference between the control and the experimental groups, in the ability to perform specific functional tasks on post operative day 3-4 or day 7-8.

There was also no difference between the control and experimental groups in the rate of progress, between the above specified time period.