

*

1. 가 가 (Hengeveld, Houtman & Zwaan, 1988).
1970
Bortin (1992) Kulkarni (1999)
40-70%
Kim (1994)
50-60%
80% 가 가 가 가 가 가
가
가 6 가
6 가
1 (Baker, 1994). 6 가
가 가

*

가 (Dimeo, 1996, 1997, 1997; Mock, 1994) 가 (Dimeo, 1996, 1997, 1998; Mock, 1994). (Adiputra, 1996; MacVICAR, 1989; Mock, 1994), (Dimeo, 1997, 1998; Mock, 1994; Wunningham & MacVICAR, 1988), 가가 (Dimeo, 1997). (Mock, 1994). (Mock, 1994; Dimeo, 1997; Sisto, 1996). 가 (Mock, 1994) 가 (Baker, 1994, Dimeo, 1997)

가

2.

1)

2)

3.

가

가

1)

가

2)

가

1.

가

Dimeo (1996, 1997, 1997, 1998), MacVICAR (1989), Mock (1994), Wunningham & MacVICAR(1988)

(one-group pretest-posttest design)

< 1 >

가

< 1 >

가

(exercise prescription)

2.

2000 2 21 2000 6 10

16 (convenience sampling) 3
1

1) () 6 6 3-5
18 60 가
, 2) (1-4 20
) 1 20
10mg 10 가 5
, 3) 1 30 , 40 (RPE)
Performance Status Scale 70% 12-14 () 가 2
가 , 5) 10-11 (가)
가 62% 75%
, 6) . 3 9-12
7) , 85%
가 45% 60%
1) , 2) 가 4,000 6,000
, 3) 2,000 3,000 ,
, 4) 가 가 10,000 15,000
, 5) 5 , 3
3 3 , 1

3.
1) :
2) SF-36(Short Form-36)
12 . SF-36 Ware 1990
가 (Hann ,
1997; Ware , 1994). Ware (1994) SF-36
Physical functioning 0.93,
13 Role physical 0.84, Bodily pain 0.82, General
health perception 0.78, Vitality 0.87, Social
functioning 0.85, Role emotional 0.83, Mental
health 0.90
< 2> (1997) 가
Cronbach's = .85,
가 Cronbach's = .51,
, , Cronbach's = .74, Cronbach's

ID						
1	/	3-5 /	(1-4) 20 (5-8) 30 (9-12)40	(1-4) RPE 10-11 (5-12)RPE 12 (120 / 62% MHR)	12 (84)	4000-5000
2	/	3-5 /	(1-2) 20 (5-8) 30 (9-12) 40	RPE 12- 14(125- 150 / , 62 73% MHR)	12 (84)	4000-5000
3	/	3-5 /	(1-2) 20 (3-4) 30 (9-12) 40	RPE 12- 14(115- 130 / , 62 73% MHR)	12 (84)	5000-6000
4	/	5 /	(1-2) 20 (3-4) 30 (5-12) 40-60	RPE 12- 14(120- 170 / , 62 85% MHR)	12 (84)	15.000
5	/	3-5 /	(1-2) 20 (3-4) 30 (5-12) 40-50	RPE 12- 14(130- 140 / , 62 73% MHR)	12 (84)	5000-6000
6	/	3-5 /	(1-2) 20 (3-4) 30 (5-12) 40-50	RPE 12- 14 (126 / ,62 73%MHR)	12 (84)	10.000
7	/	3-5 /	(1-2) 20 (3-4) 30 (9-12)40-50	RPE 12- 14(130 / , 62 73% MHR)	12 (84)	5000
8	/	3-5 /	(1-2) 20 (3-4) 30 (5-12)40-60	RPE 12- 14(150 / , 62 85% MHR)	12 (84)	15.000
9	/	3-5 /	(1-2) 20 (3-4) 30 (5-12)40-50	RPE 12- 14(120- 133 / - 62 73% MHR)	12 (84)	6000
10		3-5 /	(1-2) 20 (3-4) 30 (5-12) 40	(1-2)RPE 11(100 /) (3-4)RPE 12- 13(120 / 62 73% MHR)	12 (84)	2000-3000
11	/	3-5 /	(1-2) 20 (3-4) 30 (5-12) 40	RPE 12- 14(120- 150 / , 62 73% MHR)	12 (84)	2000-4000
12	/	3-5 /	(1-2) 20 (3-4) 30 (5-12)40-50	RPE 12- 14(130- 140 / , 62 73% MHR)	12 (84)	
13	/	3-5 /	(1-2) 20 (3-4) 30 (5-12)40-50	RPE 12- 14(120 / , 62 73% MHR)	12 (84)	5000-6000
14	/	3-5 /	(1-2) 20 (3-4) 30 (5-12)40-50	RPE 12- 14(120 / , 62 73% MHR)	12 (84)	4000-5000
15	/	3-5 /	(1-2) 20 (3-4) 30 (5-12) 40	RPE 12- 14(113- 150 / 62 73% MHR)	12 (84)	4000-5000
16	/	3-5 /	(1-2) 20 (3-4) 30 (5-12)40-60	RPE 12- 14(120- 130 / , 62 73% MHR)	12 (84)	10.000

* RPE (Ratings of Perceived Exertion) / * MHR (Maximum Heart Rate)

=.75, Cronbach's =.70, Cronbach's
=.65, Cronbach's =.75, Cronbach's
=.72 가 2 6
1

d. (FLEXION-D-
T.K.K5103)

5cm

0

. 0

3)

. 2

cm

.

e.

(JUMP-MD-T.K.K5106)

cm . f.

. g.

Milpipas

가

1m

3

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(02 INTAKE 21)

50 60RPM

13

. 20 가

3

C Y

가

a.

4.

cm

(Body

1)

(

Composition Analyzer In Body 2.0 - Biospace
Co. Ltd.)

)

가 8

2

가

(),

. b.

BACK-D-T.K.K5102

15cm

30

가

2)

. 2

kg . c.

3)		30	가	4)	가	
	30					
4)	가	가		1.		
	1					< 2>
	30	16			9 (56.25%),	7 (43.75%)
		14			34.0 (9.77%)	
					11 (68.75%),	5 (31.25%)
5)		16			12 (75.00%)	10
				(62.5%)	가	
				10 (62.5%),		4 (25.0%)
						15
6)				(93.75%)	12	
				< 2>		N = 16
						(%)
7)			가			9 (56.25)
						7 (43.75)
					20	6 (37.50)
					30	5 (31.25)
					40	5 (31.25)
						(
					34.0 ±9.77)	
8)		12				11 (68.75)
						5 (31.25)
						4 (25.00)
9)		4				12 (75.00)
						1 (6.25)
						4 (25.00)
10)		12				5 (31.25)
						6 (37.50)
						10 (62.50)
						4 (25.00)
						2 (12.50)
					12	15 (93.75)
5.					13	1 (6.25)

- 1) , 2.
- 2) 가 가 1, 2 paired t-test 가
- 3) Cronbach's alpha 가 1.

가

가

paired t-test

< 3>

(t = 2.39, p = 0.03), (t = 2.35, p = 0.03),
(t = 2.58, p = 0.02)가

가 1

< 3>

N = 16

()	()	t	p
2.62 (0.30)	2.76 (0.21)	2.39	0.03*
4.28 (0.86)	4.47 (0.69)	0.85	0.40
1.71 (1.64)	1.13 (1.45)	-1.32	0.21
1.14 (1.29)	0.53 (0.92)	-1.33	0.20
4.61 (0.71)	4.84 (0.64)	1.09	0.29
3.88 (1.13)	4.58 (0.92)	2.35	0.03*
1.81 (0.73)	1.56 (0.57)	-1.73	0.10
3.40 (0.87)	3.76 (0.67)	1.40	0.18
3.93 (1.16)	4.50 (0.82)	2.58	0.02*

*p < 0.05

가 2.

paired t-test

< 4>

가

28.72ml/kg/min (±6.72) 30.4lml/
kg/min (±6.92) (t = 2.43, p = 0.02)

가 127.44mmHg

(±16.52) 115.73mmHg (±16.56) (t = -4.09,
p = 0.001) , 83.44mmHg (±

12.23) 76.33 (±12.64) (t = -3.43, p = 0.002)

82.56 / (±11.39) 73.27 / (±9.53) (t = -3.43,
p = 0.004)

가

13.31 / (±13.85) 18.07

/ (±17.8) (t = 2.79, p = 0.015) , 62.56kg
(±23.74) 71.87kg (±21.95) (t = 5.18, p = 0.00)

가

가

가

30.81cm (±12.04)

35.73cm (±11.52) (t = 5.55, p = 0.001) ,

29.81 (±20.95) 47.67 (±34.51) (t = 3.57,
p = 0.003) 가

가

(Hgb)

(Hct)

가 (Hgb) 11.99g/dl

(±1.61) 13.18g/dl (±1.36) (t = 5.92, p = 0.00)

가

(Hct)

34.79% (±5.01) 38.01% (±4.07) (t = 5.38,
p = 0.00) 가

< 4>

N = 16

()	()	t	p
58.14 (9.38)	57.03 (9.60)	-0.63	0.53
77.03 (9.38)	75.5 (8.75)	-0.89	0.39
88.66 (4.58)	87.93 (4.74)	-0.64	0.53
23.33 (8.34)	22.99 (8.41)	-0.45	0.65
28.72 (6.72)	30.41 (6.92)	2.43	0.02
127.44 (16.52)	115.73 (16.56)	-4.09	0.001***
83.44 (12.23)	76.33 (12.64)	-3.86	0.002**
82.56 (11.39)	73.27 (9.53)	-3.43	0.004**
13.31 (13.85)	18.07 (1.78)	2.79	0.015*
62.56 (23.74)	71.87 (21.95)	5.18	0.000***
5.99 (5.30)	8.03 (5.91)	1.54	0.15
30.81 (12.04)	35.73 (11.52)	5.55	0.001***
29.81 (20.95)	47.67 (34.51)	3.57	0.003**
41.50 (8.75)	43.33 (8.87)	1.33	0.20
Hgb 11.99 (1.61)	13.18 (1.36)	5.92	0.000***
Hct 34.79 (5.01)	38.01 (4.07)	5.38	0.000***

*p < 0.05 , **p < 0.01 , ***p < 0.001

가

가 2

1

가
가

가 가

가 가 Hann (1997) 가

가

1 3

가

30

가

가 3 4

가

가

Dimeo (1996,

가 1997, 1997, 1998)

(Baker , 1994)

5 8

가 가

가

가

가

가 Cappy (1999)

(60 , 60 , 60

9 12 , , 28ft) 가,

가

가

Duncan (1991)

(1994)

가

가

, ” (, 1994; , 1996; , 1988; , 2000; , 2000; Duncan , 1991) .
 가 . Dimeo (1996) 가 Cappy (1999) (1996)
 가 Mock (1994) . (1988)
 가 (1994)
 가 (1996) (1996) “ Dimeo (1996, 1998)
 , ” , 가 가 (1988) (1999)
 가 , , 가 (1994) 가 .
 , , , 62.56kg(±23.74)
 가 71.87kg(±21.95) 가 .
 가 Beyer (1999)
 60% 가, (1994) , 가, (1996)
 가, (1996) 가
 “ 가 가 가 가
 가 가 가 가 가
 가 , , 가 가 가
 가 가 Mock (1996)
 12 가 (1994) 12 가, Dimeo (1996)
 가 가, Beyer (1999) 가,
 가 Scherer & Schmieder(1997) 12 가
 가, (1994) (1996) 가
 가 .
 가 가 .
 가 가
 가 Karlsson (1972) ATP
 25% 가 ATP 가
 가 .
 가 가
 MacVICAR (1989) ,
 Beyer (1999) 가 가 .

가

87%

가

가

가 가

가

가 Dimeo (1997)

Hgb

()

10.1 ± 1.4g/dl 13.0 ± 1g/dl

가

가

Kjellberg (1949)

Hgb

11.6g/dl

13.7 ± 1g/dl

가

Snyder(1989)

RBC 가

(1999)

RBC, Hgb, Hct

가

Snyder(1989)

가

가

()

가

가

가

가

가

“

(1997).

가

가

”

, _____, 30(2), 251-266.

(1994). _____.

가

(1982).

, _____, 25, 109-119.

(1999).

, _____, 38(4), 331-343.

(1993). _____.

가

가,

가

가

가 가

(1994). _____.

, 3 5 ,

1 20 (가),

12-14

(),

60 75%,

(1999). _____ 가 _____.

45 60%

, _____ (2000). Regular exercise my help

- blood pressure control and aerobic capacity in hypertension. _____, 39(1), 386-393.
(1999). _____ :
_____.
(1996). _____
_____.
, (1996).
, _____,
26(2), 372-386.
(1998). _____
, 28(3), 760-771.
, (1994).
_____.
, 33(2), 416-424.
(1996).
, _____, 26(3), 556-575.
, (1997).
, _____, 9(2), 239-250.
() (1994). _____ :
(1989). _____ :
(1988), 8 aerobic dance
, cholesterol
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_____.
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- Abstract -

Key concept : Aerobic Exercise, Health Status, Physical Fitness, Stem cell Transplantation

The Effect of Aerobic Exercise Program on Health Status and Physical Fitness in Patients after the Stem Cell Transplantation

*Han, Shin Hi**

The Objectives of this research is to determine the effect of aerobic exercise program on health status and physical fitness in patients after the stem cell transplantation. This research design is one-group pretest-posttest design. Sixteen subjects were selected from one university hospital in Seoul for the study. they was carried out aerobic exercise three to five times a week for 12 weeks.

The period of data collection was from February to July, 2000.

The collected data was analysed by descriptive analysis, paired t-test, content analysis SAS program was used for the statistical analysis.

The results are as follows :

1. There was a significant improvement in the Physical functioning, Vitality and Reported change ($t=2.39$, $p=0.03$; $t=2.35$, $p=0.03$; $t=2.58$, $p=0.02$) but no change was observed in the Role physical, General health perception, Bodily pain, Social functioning, Role emotional and Mental health.
2. There was a significant improvement in the physical fitness (higher VO2 max, $t=2.43$, $p=0.02$; lower systolic pressure, $t=-4.09$, $p=0.001$; lower diastolic pressure, $t=-3.43$, $p=0.002$; lower pulse rate, $t=-3.43$, $p=0.004$; higher muscle sustaining power, $t=2.79$, $p=0.015$; higher muscle power, $t=5.18$ $p=0.000$; higher power of beginning, $t=5.55$, $p=0.001$; higher the sense of equilibrium, $t=3.57$, $p=0.003$; higher Hemoglobin, $t=5.92$, $p=0.000$; higher Hematocrit, $t=5.38$, $p=0.000$).

Therefore, this study will provide a theoretical background for patients after stem cell transplantation to understand the importance of physical exercise and maintain physical exercise; and for other researches to refer to the results for exercise protocol of rehabilitation program.

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