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The role of routine physiotherapy following open heart valve surgery in South Africans

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CHAPTER SIX

CONCLUSION

A regime of breathing exercises, coughing and mobilisation confers no advantage over instruction to walk alone in the uncomplicated post-operative valvular surgery patient. Chest physiotherapy has little impact on post-operative hypoxaemia, chest x-ray changes and length of post-operative stay on patients who have undergone uncomplicated elective heart valve surgery.

The age, race and sex of the participants in this study are typical of the patient population requiring cardiac valve surgery in the Johannesburg Hospital, South Africa.

There seems to be little or no correlation between temperature and atelectasis detectable on chest x-ray in this patient population.

The conclusions drawn from this study cannot be extrapolated to include patients who undergo emergency valve surgery, who have a documented respiratory history or those with an underlying neurological condition. They can also not include patients who are intubated for longer than 24 hours, have a post-operative intensive care stay of longer than 48 hours and those who develop cardiac instability or neurological problems post-operatively. However it would seem safe to conclude that routine chest physiotherapy does not have a prophylactic role to play in the post-operative cardiac patient. A more sound principle would be that each patient is assessed daily by a physiotherapist and

treated only in the presence of signs of a pulmonary complication. Signs and symptoms of a pulmonary complication would include:

- an otherwise unexplained oral temperature of more than 38.5° C
- radiological evidence of pronounced collapse or consolidation
- clinical evidence of a pulmonary infection resulting in prescription of antibiotics for a chest infection.

REFERENCES

Agarwal A.K., Yunus M., Ahmad J., Khan A. Rheumatic heart disease in India. JOURNAL OF THE ROYAL SOCIETY OF HEALTH 1995, 115: 303 - 309

Austen W.G. and Hutter A.M. Aquired mitral and tricuspid valve disease in: DAVIS-CHRISTOPHER TEXTBOOK OF SURGERY -VOLUME TWO. Edited by Sabiston D.C. Igaku-Shoin / Saunders International Edition 12th edition, 1981: 2364 -2389

Barlow J.B., Kingsley R.H. Pocock W.A. Rheumatic fever and rheumatic heart disease. In: Barlow J.B. PERSPECTIVES ON THE MITRAL VALVE. Philadelphia: FA Davis Co, 1987: 227 - 245.

Barlow J.B. Aspects of active rheumatic carditis. AUSTRALIAN AND NEW ZEALAND JOURNAL OF MEDICINE 1992(a), 22: 592 - 600.

Barlow J.B. Idiopathic (Degenerative) and Rheumatic Mitral Valve Prolapse: Historical Aspects and an Overview. THE JOURNAL OF HEART VALVE DISEASE 1992(b), 1: 163 - 174

Borman J.B., Gotsman M.S. (Editors) RHEUMATIC VALVULAR DISEASE IN CHILDREN Springer-Verlag Berlin Heidelberg New York 1980.

Bourn J., Jenkins S. Post-operative respiratory physiotherapy: Indications for treatment. PHYSIOTHERAPY 1992, 78: 80 - 83

Dull J. L., Dull W. L. Are maximal inspiratory breathing exercises or incentive spirometry better than early mobilization after cardiopulmonary bypass. PHYSICAL THERAPY 1983 63: 655 - 659.

Eales C. J., Barker M., Cubberley N. J. Evaluation of a single chest physiotherapy Treatment to post-operative, mechanically ventilated cardiac surgery patients. PHYSIOTHERAPY THEORY AND PRACTICE 1995, 11: 23 - 28

Engoren M. Lack of association between atelectasis and fever. CHEST 1995, 107: 81 - 84

Gale G. D., Sanders D. E. Incentive spirometry: Its value after cardiac surgery. CANADIAN ANAESTHETISTS' SOCIETY JOURNAL 1980, 27: 475 - 480.

Gorlin, R and Gorlin, S.G. Hydraulic formula for calculation of the area of the stenotic mitral valve, other cardiac valves, and central circulatory shunts. AMERICAN HEART JOURNAL. 1951, 41:1 - 6

Hedley-Whyte J., Corning H., Laver M. B., Austen W. G., Bendixen H. H. Pulmonary ventilation-perfusion relations after heart valve replacement for repair in man. JOURNAL OF CLINICAL INVESTIGATION 1965, 44: 406 - 416

Hewson J. R. Perfusion characteristics during cardiopulmonary bypass and subsequent changes in alveolar-arterial oxygen tension gradients. ANESTHESIA AND ANALGESIA 1978, 57: 298 - 302

Howell S., Hill J. D. Chest physical therapy procedures in open heart surgery. PHYSICAL THERAPY 1978, 58: 1205 - 1214

Iverson L. I. G., Ecker R. R., Fox H. E., May I. A. A comparative study of IPPB, the incentive spirometer, and blow bottles: The prevention of atelectasis following cardiac surgery. THE ANNALS OF THORACIC SURGERY 1978, 25: 197 - 200

Jenkins S. C., Soutar S. A., Loukota J. M., Johnson L. C., Moxham J. Physiotherapy after coronary artery surgery: are breathing exercises necessary? THORAX 1989, 44: 634 - 639

Jenkins S. C., Soutar S. A., Loukota J. M., Johnson L. C., Moxham J. A comparison of breathing exercises, incentive spirometry and mobilisation after coronary artery surgery. PHYSIOTHERAPY THEORY AND PRACTICE 1990, 6: 117 - 126

Jenkins S., Akinkugbe Y., Corry G., Johnson L. Physiotherapy management following coronary artery surgery. PHYSIOTHERAPY THEORY AND PRACTICE 1994, 10: 3 - 8

Johnson D., Thompson D., Mayers I. The effect of physical therapy on respiratory complications following cardiac valve surgery. **CHEST** 1996, 109: 638 - 644

Kaplan E. L., Markowitz M. The fall and rise of rheumatic fever in the United States: a commentary. **INTERNATIONAL JOURNAL OF CARDIOLOGY** 1988, 21: 3 - 10

Kirklin J.W., Barratt-Boyes B.G. Hypothermia, Circulatory Arrest, and Cardiopulmonary Bypass. In: **CARDIAC SURGERY** Second Edition. Churchill Livingstone. New York. 1993; 2: 61 - 127.

Marcus R. H., Sareli P., Pocock W. A., Barlow J.B. The spectrum of severe rheumatic mitral valve disease in a developing country. Correlations amoung clinical presentation, surgical pathologic findings, and haemodynamic sequelae. **ANNALS OF INTERNAL MEDICINE** 1994, 120: 177 - 183.

McLaren M.J., Hawkins D.M., Koornhof H.J.,Bloom K.R., Bramwell-Jones D.M., Cohen E., Gale G.E., Karnarek K., Lachman A.S., Lakier J.B., Pocock W.A., Barlow J.B. Epidemiology of rheumatic heart disease in black school children of Soweto, Johannesburg. **BRITISH MEDICAL JOURNAL** 1975, 3: 474 - 478.

Menkes H.A., Traystman R.J. State of the art: Collateral ventilation. **AMERICAN REVIEW OF RESPIRATORY DISEASE** 1977, 116:287 - 309.

Oulton J. L., Hobbs G. M., Hicken P. Incentive breathing devices and chest physiotherapy: A controlled trial. **THE CANADIAN JOURNAL OF SURGERY** 1981, 24: 638 - 640

Oikkonen M., Karjalainen K., Kähärä V., Kuosa R., Schavikin L. Comparison of incentive spirometry and intermittent positive pressure breathing after coronary artery bypass graft. **CHEST** 1991, 99: 60 - 65

Reines H. D., Sade R. M., Bradford B. F., Marshall J. Chest physiotherapy fails to prevent postoperative atelectasis in children after cardiac surgery. **ANNALS OF SURGERY** 1982 195: 451 - 455

Roses D.F., Rose M.R., Rapaport F.T. Febrile responses associated with caediac surgery. **JOURNAL OF THORACIC AND CARDIOVASCULAR SURGERY** 1974; 67: 251 - 257.

Sanchez DeLeon R, Patterson J.L., Sykes M.K. Changes in colloid osmotic pressure and plasma albumin concentration associated with extracorporeal circulation.**BRITISH JOURNAL OF ANAESTHESIA** 1982, 54: 465 - 473.

Smith E.E., Naftel D.C., Blackstone E.H., et al. Microvascular permeability after cardiopulmonary bypass. **JOURNAL OF THORACIC AND CARDIOVASCULAR SURGERY** 1987; 94: 225 - 233.

Spiro S.G. and Dowdeswell I.R.G. Arterialised ear lobe blood samples for blood gas tensions. **BRITISH JOURNAL OF DISEASES OF THE CHEST** 1976, 70: 263 - 268

Stiller K., Montarello J., Wallace M., Daff M., Grant R., Jenkins S., Hall B., Yates H. Are breathing and coughing exercises necessary after coronary artery surgery? **PHYSIOTHERAPY THEORY AND PRACTICE** 1994, 10: 143 - 152

Stiller K., Crawford R., McInnes M., Montarello J., Hall B. The incidence of pulmonary complications in patients not receiving prophylactic chest physiotherapy after cardiac surgery. **PHYSIOTHERAPY THEORY AND PRACTICE** 1995, 11: 205 - 208

Stock M. C., Downs J. B., Cooper R. B., Lebenson I. M., Cleveland J., Weaver D. E., Alster J. M., Imrey P. B. Comparison of continuous positive airway pressure, incentive spirometry, and conservative therapy after cardiac operations. **CRITICAL CARE MEDICINE** 1984, 12: 969 - 972

Vraciu J. K., Vraciu R. A. Effectiveness of breathing exercises in preventing pulmonary complications following open heart surgery. **PHYSICAL THERAPY** 1977, 57: 1367 - 1371

Webber C.E., Garnett E.S. The relationship between colloid osmotic pressure and plasma proteins during and after cardiopulmonary bypass. **JORNAL OF THORACIC AND CARDIOVASCULAR SURGERY** 1973; 65: 234 - 237.

West J.B. Methods of measuring ventilation-perfusionratio inequality in: **VENTILATION / BLOOD FLOW AND GAS EXCHANGE**. Fith edition. Blackwell Scientific Publications, 1990:80 - 94.

Wilson A. P. R., Treasure T., Grüneberg R. N., Sturridge M. F., Burridge J. Should the temperature chart influence management in cardiac operations? Results of a prospective study in 314 patients. **JOURNAL OF THORACIC AND CARDIOVASCULAR SURGERY** 1988, 96: 518 - 523

APPENDIX 1

Demographic data for the non treatment group

Non treatment group						n = 14
Patient No.	Age	Sex	Race	Height (m)	Weight (Kg)	BMI(Kg/m2)
1	29	F	B	1.54	67.30	28.38
7	50	F	B	1.54	57.00	24.03
9	11	F	B	1.26	22.50	14.17
11	26	F	B	1.59	50.20	19.86
13	12	F	B	1.39	30.10	15.58
15	35	F	B	1.58	67.80	27.26
16	38	F	B	1.55	80.50	33.51
19	25	F	B	1.64	65.30	24.28
20	22	F	B	1.44	50.20	24.21
21	29	F	B	1.56	43.00	17.67
28	40	F	B	1.51	49.80	21.99
29	15	F	B	1.54	46.20	19.48
31	30	M	B	1.61	53.80	20.76
32	36	F	B	1.56	54.70	22.48

Demographic data for the treatment group

Treatment group						n = 16
Patient No.	Age	Sex	Race	Height (m)	Weight (Kg)	BMI (Kg/m2)
3	16	F	B	1.28	39.70	24.23
4	13	M	B	1.38	29.10	15.28
5	44	F	B	1.60	84.20	32.89
6	11	M	B	1.26	22.00	13.86
8	53	F	B	1.60	50.30	19.65
12	42	F	A	1.67	70.70	25.35
17	23	F	B	1.63	52.20	19.65
18	12	M	B	1.34	25.60	14.26
22	32	F	B	1.55	44.10	18.36
23	40	M	B	1.54	48.00	20.24
25	63	M	W	1.84	85.60	25.28
26	23	M	B	1.76	67.40	21.76
27	40	F	B	1.60	48.30	18.87
30	33	M	B	1.64	61.90	23.16
33	24	F	W	1.58	44.20	17.71
34	27	M	B	1.72	56.00	18.93

APPENDIX 2

Data for oxygen saturation - non treatment group

Non Treatment Group				
Oxygen Saturation				
Patient No.		Pre-op	Day 1	Day 4
1		97.30	97.80	91.10
7		95.20	98.40	98.20
9		85.20	98.80	87.30
11		97.30	98.10	97.00
13		97.40	98.60	96.70
15		97.70	97.00	91.50
16		97.10	98.40	94.20
19		96.30	98.50	93.70
20		97.80	99.70	91.60
21		99.00	98.80	93.20
28		96.90	98.60	87.20
29		97.50	97.20	96.80
31		84.80	96.90	82.20
32		94.10	97.10	87.60

Data for oxygen saturation - treatment group

Treatment Group				
Oxygen Saturation				
Patient No.		Pre-op	Day 1	Day 4
3		97.70	98.10	92.60
4		88.30	98.10	98 00
5		92.80	96.40	91.20
6		93.10	89.00	98.80
8		97.20	97.50	86.30
12		96.40	96.70	88.60
17		95.40	99.20	89.90
18		94.80	95.00	96.40
22		96.90	96.10	89.20
23		94.50	85.70	92.10
25		97.00	95.70	84.70
26		97.70	97.10	88.20
27		97.80	92.60	92.10
30		96.30	97.90	94.20
33		97.40	97.40	93.10
34		97.10	97.90	96.30

Data for temperature - non treatment group

Non Treatment						
Temperature						
Patient No.		Pre-op	Day 1	Day 2	Day 3	Day 4
1		36.80	38.20	36.40	37.30	37.00
7		36.30	37.10	37.50	36.90	36.80
9		36.50	36.80	37.20	37.50	36.50
11		36.70	37.80	38.00	38.20	37.20
13		36.30	37.30	37.60	37.90	36.90
15		36.40	37.60	38.00	37.10	37.20
16		36.70	37.40	37.20	38.00	36.50
19		36.10	37.10	37.00	36.90	36.50
20		36.20	36.60	38.20	37.00	36.80
21		36.50	38.40	37.00	37.00	37.00
28		36.60	37.90	38.00	36.50	36.50
29		36.20	37.80	37.70	36.50	36.60
31		36.40	38.70	37.10	37.70	36.50
32		36.40	38.10	37.80	37.10	37.80

Data for temperature - treatment group

Treatment Group						
Temperature						
Patient No.		Pre-op	Day 1	Day 2	Day 3	Day 4
3		36.00	37.50	37.60	37.20	37.00
4		37.20	37.90	38.00	37.00	36.80
5		36.60	37.60	37.00	37.00	36.80
6		36.70	37.90	37.50	37.50	36.90
8		36.50	**38.60**	37.50	37.20	36.50
12		36.00	36.80	37.00	36.40	36.50
17		36.00	**38.50**	37.50	38.00	37.00
18		36.00	**38.50**	38.00	37.50	37.10
22		36.30	37.40	37.10	35.50	36.70
23		36.50	37.80	36.70	37.10	37.30
25		36.60	37.90	37.20	37.00	36.70
26		37.00	38.00	37.00	38.20	37.10
27		36.50	37.40	37.20	37.20	37.00
30		36.50	**38.60**	36.50	37.80	35.80
33		36.50	38.20	37.50	37.50	36.80
34		36.30	38.40	37.70	37.80	37.80

Data for respiratory rate - non treatment group

Non Treatment group						
Respiratory rate (breaths/min)						
Patient No.		Pre-op	Day 1	Day 2	Day 3	Day 4
1		12	24	32	28	24
7		16	20	22	24	20
9		36	20	36	56	36
11		24	28	24	24	24
13		22	24	21	24	22
15		15	32	30	28	24
16		15	30	28	35	24
19		12	21	24	22	24
20		14	24	20	20	20
21		10	22	20	20	24
28		10	20	24	20	20
29		12	22	20	16	16
31		10	26	40	24	24
32		16	22	20	20	18

Data for respiratory rate - treatment group

Treatment Group						
Respiratory Rate (breaths/min)						
Patient No.		Pre-op	Day 1	Day 2	Day 3	Day 4
3		12	14	24	16	16
4		18	36	32	26	32
5		12	24	24	24	20
6		20	24	24	28	22
8		14	20	18	32	20
12		22	21	24	22	20
17		10	24	38	40	36
18		20	36	44	24	36
22		16	16	24	15	16
23		13	20	21	18	20
25		14	20	20	20	18
26		15	22	28	24	20
27		12	22	24	22	18
30		12	20	22	20	18
33		12	22	20	45	18
34		14	24	22	20	20

APPENDIX 3

Chest x-ray scores - non treatment group

Non Treatment group												
Chest x-ray scores												
Patient	Pre-op			Day1			Day 2			Day 4		
	Right	Left	Total	Right	Left	Total	Right	Left	Total	Right	Left	Total
1	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	3	0	3	3	0	3
9	0	0	0	3	0	3	3	0	3	3	0	3
11	0	0	0	3	3	6	3	3	6	3	3	6
13	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	3	0	3	3	0	3	3	0	3
16	0	0	0	3	0	3	3	0	3	3	0	3
19	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	3	0	3	3	0	3
29	0	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	3	3	6	3	0	3	3	0	3
32	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	15	6	21	21	3	24	21	3	24

Chest x-ray scores - treatment group

Treatment group												
Chest x-ray scores												
Patient	Pre-op			Day1			Day 2			Day 4		
	Right	Left	Total	Right	Left	Total	Right	Left	Total	Right	Left	Total
3	0	0	0	3	0	3	3	0	3	3	0	3
4	0	0	0	0	0	0	3	0	3	3	0	3
5	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	3	3	6	3	3	6	3	3	6
8	0	0	0	0	0	0	3	3	6	3	3	6
12	0	0	0	3	0	3	3	0	3	3	0	3
17	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	3	0	3	3	0	3	0	0	0
22	0	0	0	3	3	6	3	3	6	3	3	6
23	0	3	3	0	3	3	0	3	3	0	3	3
25	0	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	3	0	3	3	0	3
27	3	0	0	3	0	3	3	0	3	3	0	3
30	0	0	0	0	0	0	3	0	3	3	0	3
33	0	0	0	0	0	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0	0	0	0	0	0
Total	3	3	3	18	9	27	30	12	42	27	12	39

APPENDIX 4

Pre-operative medication - non treatment group

	Non Treatment group				
			Pre-op medication		
Patient	Drug 1	Drug 2	Drug 3	Drug 4	Drug 5
1	Lasix 80bd	Slow k 2tds	Renitec 5mg bd	Amphogel 20mls tds	
7	Lasix 80bd	Slow k 2bd	Digoxin .25mg		
9	Lasix 20bd	Slow k 1bd	Digoxin 1.25mg	Captopril 12.5mg/bd	
11	Lasix 40bd	Slow k 2tds	Kefzol 1g 8/24	Clexane 40mg	
13	Lasix 40bd	Slow k 1bd	Lanoxin .125mg	Elanalpril 5mg	
15	Lasix 40bd	Slow k 2bd	Actifed 1tds	Solphyflex 15mls	
16	Lasix 40bd	Slow k 2bd			
19	Warfarin				
20	Lasix 40bd	Slow k 2tds	Captopril 2.5mg/tds		
21	Lasix 80bd	Slow k 3bd	Digoxin 0.25mg		
28	Lasix 40bd	Slow k 2bd			
29	Lasix 40bd	Slow k 1bd	Digoxin .25mg		
31	Lasix 80bd	Slow k 2bd	Digoxin .25mg		
32	Lasix 40bd	Slow k 2bd	Digoxin .25mg	Clexane 40mg	Isoptin 40mg

Pre-operative medication - treatment group

	Treatment Group				
		Pre-op medication			
Patient	Drug 1	Drug 2	Drug 3	Drug4	Drug 5
3	Lasix 40bd	Slow K 1bd	Captopril 12.5mg bd	Pen VK 250mg bd	
4	Lasix 40bd	Slow K 2bd	Gentamacin 80mg bd	Pen VK 2g 6/24	Cloxacillin 500mg 6/
5	Lasix 40	Slow K 2	Cloxacillin 500mg 6/24		
6	Lasix 20bd	Slow K 1bd	Pen VK 250mg bd		
8	Lasix 40bd	Slow K 2bd			
12	Lasix 40bd	Slow K 2bd	Digoxin 0.25mg	Pen VK 250mg bd	
17	Lasix 40bd	Slow K 2bd	Digoxin 0.25mg		
18	Lasix 40bd	Slow K 2bd	Pen VK 250mg bd	Captopril 12.5mg bd	
22	Lasix 80bd	Slow K 1bd	Digoxin 0.25mg	Amiodarone 200mg	
23	Lasix 80bd	Slow K 3tds			
25	Lasix 40bd	Slow K 1bd			
26	Adalat 30mg	Amikacin 750mg	Cloxacillin 2.5g 6/24	Pen VK 500mg bd	
27	Lasix 40bd	Slow K 2bd	Digoxin 0.25mg	Pen VK 500mg bd	Cloxacillin 1g
30	Lasix 80bd	Slow K 3bd	Digoxin 0.25mg		
33	Pen VK 250bd	Pregamal 1bd			
34	Lasix 40bd	Slow K 2bd	Tenormin 50mg		

Day 1 medication - non treatment group

Patient	Drug 1	Drug 2	Drug 3	Drug 4	Drug 5	Drug 6
			Non treatment group			
			Day 1 medication			
1	Lasix 40bd	Slow k 2bd	Kefzol 1g 8/24	Clexane 40mg	Captopril 6.25mg tds	Pregamal 1bd
7	Lasix 40bd	Slow k 2bd	Kefzol 1g 8/24	Clexane 40mg	Pregamal 1bd	Adalat 10mg tds
9	Lasix 10bd	Slow k 2bd	Kefzol 250mg 8/24	Captopril 12.5mg tds	Pen VK 250mg bd	
11	Lasix 40bd	Slow k 2tds	Kefzol 1g 8/24	Clexane 40mg		
13	Lasix 20bd	Slow k 1bd	Kefzol 500mg 6/24	Captopril 6.25mg tds	Pregamal 1	
15	Lasix 40bd	Slow k 2tds	Kefzol 1g 8/24	Clexane 40mg	Pregamal 1bd	Captopril 12.5mg tds
16	Lasix 40bd	Slow k 2bd	Kefzol 1g 8/24	Clexane 40mg	Captopril 12.5mg tds	
19	Lasix 40bd	Slow k 2tds	Kefzol 1g 8/24	Clexane 40mg	Pregamal 1bd	
20	Lasix 40bd	Slow k 2bd	efzol 1g 8/24	Clexane 40mg	Captopril 6.25mg tds	Pen VK 250mg bd
21	Lasix 40bd	Slow k 2bd	Kefzol 1g 8/24	Clexane 40mg	Captopril 6.25mg tds	Pregamal 1bd
28	Lasix 40bd	Slow k 2bd	Kefzol 1g 8/24	Clexane 40mg	Pregamal 1bd	Warfarin
29	Lasix 20bd	Slow k 1tds	Kefzol 1g 8/24	Clexane 40mg	Pregamal 1bd	Pen VK 250mg bd
31	Lasix 40bd	Slow k 2tds	Kefzol 1g 8/24	Clexane 40mg	Captopril 12.5mg tds	
32	Lasix 40bd	Slow k 2bd	Kefzol 1g 8/24	Clexane 40mg	Digoxin .25mg	

Day 1 medication - treatment group

			Treatment Group Day 1 Medication				
Patient	Drug 1	Drug 2	Drug 3	Drug 4	Drug 5	Drug 6	Drug 7
3	Lasix 20bd	Slow K 1tds	Kefzol 1g 8/24	Clexane 40mg	Pregamal 1bd	Capoten 12.5tds	Warfarin
4	Lasix 20bd	Slow K 2bd	Gentamacin 150mg bd	Pen VK 2mg 4/24	Cloxacillin 1g 6/24	Pregamal 1bd	Warfarin
5	Lasix 40bd	Slow K 2bd	Kefzol 1g 8/24	Clexane 40mg			
6	Lasix 20bd	Mist KCl 10mlbd	Kefzol 500mg 8/24				
8	Lasix 40bd	Slow K 2tds	Kefzol 1g 8/24	Clexane 40mg	Pregamal 1bd	Adalat 10tds	
12	Lasix 40bd	Slow K 2bd	Kefzol 1g 8/24				
[illegible]	Lasix 40bd	Slow K 2bd	Kefzol 1g 8/24	Clexane 40mg			
18	Lasix 20bd	Slow K 1bd	Pen VK 250mg bd	Captopril 6.25mg bd	Pregamal 1bd	Kefzol 300mg 8/24	
22	Lasix 40bd	Slow K 2bd	Kefzol 1g 8/24	Clexane 40mg	Pregamal 1bd	Gentamacin 160mg bd	
23	Lasix 40bd	Slow K 2bd	Kefzol 1g 8/24	Clexane 40mg			
25	Lasix 40bd	Slow K 1bd	Kefzol 1g 8/24	Clexane 40mg	Pregamal 1bd		
26	Lasix 40bd	Slow K 1bd	Kefzol 1g 8/24	Clexane 40mg	Pregamal 1bd	Captopril 12.5mg bd	
27	Lasix 40bd	Slow K 1bd	Kefzol 1g 8/24				
30	Lasix 40bd	Slow K 2bd	Kefzol 1g 8/24	Clexane 40mg			
33	Lasix 40bd	Slow K 2bd	Kefzol 1g 8/24	Clexane 40mg	Pregamal 1bd		
34	Lasix 40bd	Slow K 2bd	Kefzol 1g 8/24	Clexane 40mg	Pregamal 1bd		

		Non treatment group					
			Day 2 medication				
Patient	Drug 1	Drug 2	Drug 3	Drug4	Drug 5	Drug 6	Drug 7
1	Lasix 40bd	Slow k 2bd	Kefzol 1g 8/24	Clexane 40mg	Captopril 1.5mg tds	Pregamal 1bd	
7	Lasix 40bd	Slow k 2tds	Kefzol 1g 8/24	Clexane 40mg	Pregamal 1bd	Adalat 10mg tds	
9	Lasix 10bd	Slow k 2bd	Captopril 12.5mg tds	Pen VK 250mg bd			
11	Lasix 40bd	Slow k 2tds	Clexane 40mg				
13	Lasix 20bd	Slow k 1bd	Kefzol 500mg 6/24	Captopril 6.25mg tds	Pregamal 1		
15	Lasix 40bd	Slow k 2tds	Kefzol 1g 8/24	Clexane 40mg	Pregamal 1bd	Pen VK 250mg bd	
16	Lasix 40bd	Slow k 2bd	Kefzol 1g 8/24	Clexane 40mg	Captopril 6.25mg tds		
19	Lasix 40bd	Slow k 2tds	Kefzol 1g 8/24	Clexane 40mg	Pregamal 1bd		
20	Lasix 40bd	Slow k 2bd	Kefzol 1g 8/24	Captopril 6.25mg tds	Pen VK 250mg bd		
21	Lasix 40bd	Slow k 2bd	Kefzol 1g 8/24	Clexane 40mg	Captopril 6.25mg tds	Pregamal 1bd	
26	Lasix 40bd	Slow k 2bd	Kefzol 1g 8/24	Clexane 40mg	Pregamal 1bd	Warfarin	
29	Lasix 10bd	Slow k 1tds	Kefzol 1g 8/24	Pregamal 1bd	Pen VK 250mg bd	Captopril 6.25tds	Adalat 10tds
31	Lasix 40bd	Slow k 2tds	Kefzol 1g 8/24	Clexane 40mg	Captopril 12.5mg tds		
32	Lasix 40bd	Slow k 2bd	Kefzol 1g 8/24	Clexane 40mg	Isopten 40mg		

			Treatment group Day 2 medication			
Patient	Drug 1	Drug 2	Drug 3	Drug4	Drug 5	Drug 6
3	Lasix 10bd	Slow K 1tds	Kefzol 1g 8/24	Clexane 40mg	Pregamal 1bd	Capoten 6.25tds
4	Lasix 10bd	Slow K 2bd	Gentamacin 150mg bd	Pen VK 2mg 4/24	Cloxacillin 1g 6/24	
5	Lasix 40bd	Slow K 2bd	Kefzol 1g 8/24	Clexane 40mg		
6	Lasix 20bd	Mist KCl 10mlbd	Kefzol 500mg 8/24			
8	Lasix 40bd	Slow K 2tds	Kefzol 1g 8/24	Clexane 40mg	Pregamal 1bd	Adalat 10tds
12	Lasix 40bd	Slow K 2bd	Kefzol 1g 8/24			
17	Lasix 40bd	Digoxin 0.5 6/24	Kefzol 1g 8/24	Clexane 40mg	Rocephine 2g	Clindamycin 600mg 6/24
18	Lasix 20bd	Slow K 1bd	Pen VK 250mg bd	Captopril 6.25mg bd	Pregamal 1bd	Kefzol 300mg 8/24
22	Lasix 40bd	Slow K 2bd	Kefzol 1g 8/24	Clexane 40mg	Pregamal 1bd	Gentamacin 160mg bd
23	Lasix 40bd	Slow K 2bd	Kefzol 1g 8/24	Clexane 40mg		
25	Lasix 40bd	Slow K 1bd	Kefzol 1g 8/24	Clexane 40mg	Pregamal 1bd	
26	Lasix 40bd	Slow K 1bd	Kefzol 1g 8/24	Clexane 40mg	Pregamal 1bd	Captopril 12.5mg bd
27	Lasix 40bd	Slow K 1bd	Kefzol 1g 8/24			
30	Lasix 40bd	Slow K 2bd	Kefzol 1g 8/24	Clexane 40mg		
33	Lasix 40bd	Slow K 2bd	Kefzol 1g 8/24	Clexane 40mg	Pregamal 1bd	
34	Lasix 40bd	Slow K 2bd	Kefzol 1g 8/24	Pregamal 1bd		

Day 3 medication - non treatment group

		Non treatment group					
			Day 3 medication				
Patient	Drug 1	Drug 2	Drug 3	Drug4	Drug 5	Drug 6	Drug 7
1	Lasix 40bd	Slow k 2bd	Kefzol 1g 8/24	Clexane 40mg	Captopril 1.5mg tds		
7	Lasix 40bd	Slow k 2tds	Kefzol 1g 8/24	Clexane 40mg	Pregamal 1bd	Adalat 10mg tds	
9	Lasix 10bd	Slow k 2bd	Captopril 12.5mg tds	Pen VK 250mg bd			
11	Lasix 40bd	Slow k 2tds	Clexane 40mg	Keflex 500mg	Pregamal 1bd		
13	Lasix 20bd	Slow k 1bd	Captopril 6.25mg tds	Pregamal 1			
15	Lasix 40bd	Slow k 2tds	Clexane 40mg	Pregamal 1bd	Pen VK 250mg bd		
16	Lasix 40bd	Slow k 2bd	Clexane 40mg	Captopril 6.25mg tds			
19	Lasix 40bd	Slow k 2tds	Clexane 40mg	Pregamal 1bd			
20	Lasix 40bd	Slow k 2bd	Captopril 6.25mg tds	Pen VK 250mg bd	Clexane 40mg		
21	Lasix 40bd	Slow k 2bd	Kefzol 1g 8/24	Clexane 40mg	Captopril 6.25mg tds	Pregamal 1bd	
28	Lasix 40bd	Slow k 2bd	Kefzol 1g 8/24	Clexane 40mg	Pregamal 1bd	Warfarin	
29	Lasix 10bd	Slow k 1tds	Clexane 40mg	Pregamal 1bd	Pen VK 250mg bd	Captopril 3.125tds	Adalat 5tds
31	Lasix 40bd	Slow k 2tds	Kefzol 1g 8/24	Clexane 40mg	Captopril 12.5mg tds		
32	Lasix 40bd	Slow k 2bd	Digoxin .25mg	Isopten 40mg			

			Treatment group Day 3 medication			
Patient	Drug 1	Drug 2	Drug 3	Drug4	Drug 5	Drug 6
3	Lasix 10bd	Slow K 1tds	Pregamal 1bd	Capoten 6.25tds		
4	Lasix 10bd	Slow K 2bd	Gentamacin 150mg bd	Pen VK 2mg 4/24	Cloxacillin 1g 6/24	
5	Lasix 40bd	Slow K 2bd	Clexane 40mg			
6	Lasix 10bd	Mist KCl 10mlbd	Pen VK 250mg bd			
8	Lasix 40bd	Slow K 2tds	Kefzol 1g 8/24			
12	Lasix 40bd	Slow K 2bd	Kefzol 1g 8/24	Clexane 40mg	Pregamal 1bd	Adalat 10tds
17	Lasix 40bd	Digoxin 0.5 6/24	Rocephine 2g			
18	Lasix 10bd	Slow K 1bd	Pen VK 250mg bd	Clindamycin 600mg 6/24		
22	Lasix 40bd	Slow K 2bd	Kefzol 1g 8/24	Captopril 6.25mg bd	Pregamal 1bd	Kefzol 300mg 8/24
23	Lasix 40bd	Slow K 2bd	Kefzol 1g 8/24	Clexane 40mg	Pregamal 1bd	Gentamacin 160mg bd
25	Lasix 40bd	Slow K 1bd	Clexane 40mg	Clexane 40mg		
26	Lasix 40bd	Clexane 40mg	Pregamal 1bd	Pregamal 1bd		
27	Lasix 40bd	Slow K 1bd	Kefzol 1g 8/24	Captopril 12.5mg bd		
30	Lasix 40bd	Slow K 2bd				
33	Lasix 40bd	Slow K 2bd	Pregamal 1bd			
34	Lasix 40bd	Slow K 2bd	Kefzol 1g 8/24	Pregamal 1bd		

Non treatment group							
			Day 4 medication				
Patient	Drug 1	Drug 2	Drug 3	Drug4	Drug 5	Drug 6	Drug 7
1	Lasix 40bd	Slow k 2bd	Kefzol 1g 8/24	Clexane 40mg	Captopril 1.5mg tds	Maxalon	Ulsanic
7	Lasix 40bd	Slow k 2tds	Kefzol 1g 8/24	Clexane 40mg	Pregamal 1bd	Adalat 10mg tds	
9	Lasix 10bd	Slow k 2bd	Captopril 12.5mg tds	Pen VK 250mg bd			
11	Lasix 40bd	Slow k 2tds	Clexane 40mg	Keflex 500mg	Pregamal 1bd		
13	Lasix 20bd	Slow k 1bd	Captopril 6.25mg tds	Pregamal 1			
15	Lasix 40bd	Slow k 2tds	Clexane 40mg	Pregamal 1bd	Pen VK 250mg bd		
16	Lasix 40bd	Slow k 2bd	Clexane 40mg	Captopril 6.25mg tds			
19	Lasix 40bd	Slow k 2tds	Clexane 40mg	Pregamal 1bd			
20	Lasix 40bd	Slow k 2bd	Captopril 6 25mg tds	Pen VK 250mg bd			
21	Lasix 40bd	Slow k 2bd	Kefzol 1g 8/24	Clexane 40mg	Captopril 6.25mg tds	Pregamal 1bd	
28	Lasix 40bd	Slow k 3tds	Pregamal 1bd				
29	Lasix 10bd	Slow k 1tds	Clexane 40mg	Pregamal 1bd	Pen VK 250mg bd	Captopril 3,125tds	Adalat 5tds
31	Lasix 40bd	Captopril 12.5mg tds					
32	Lasix 40bd	Slow k 2bd	Digoxin .25mg	Isopten 40mg			

Day 4 medication - non treatment group

			Treatment group Day 4 medication			
Patient	Drug 1	Drug 2	Drug 3	Drug4	Drug 5	Drug 6
3	Lasix 10bd	Slow K 1tds	Pregamal 1bd	Capoten 6.25tds		
4	Lasix 10bd	Slow K 1bd	Gentamacin 150mg bd	Pen VK 2mg 4/24	Cloxacillin 1g 6/24	
5	Lasix 40bd	Slow K 2bd	Clexane 40mg			
6	Lasix 10bd	Mist KCl 10mlbd	Pen VK 250mg bd			
8	Lasix 40bd	Slow K 2tds	Kefzol 1g 8/24	Clexane 40mg	Pregamal 1bd	Adalat 10tds
12	Kefzol 1g 8/24					
17	Rocephine 2g	Clindamycin 600mg 6/24				
18	Lasix 10bd	Slow K 1	Pen VK 250mg bd	Captopril 6.25mg bd	Pregamal 1bd	
22	Lasix 40bd	Slow K 2bd	Kefzol 1g 8/24	Clexane 40mg	Pregamal 1bd	Gentamacin 160mg bd
23	Lasix 40bd	Clexane 40mg				
25	Lasix 40bd	Slow K 1bd	Clexane 40mg	Pregamal 1bd		
26	Lasix 40bd	Clexane 40mg	Pregamal 1bd	Captopril 12.5mg bd		
27	Lasix 40bd	Slow K 1bd	Kefzol 1g 8/24			
30	Lasix 40bd	Slow K 2bd				
33	Lasix 40bd	Slow K 2bd	Pregamal 1bd			
34	Lasix 40bd	Slow K 2bd	Kefzol 1g 8/24	Pregamal 1bd		



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