

Early mobilization and exercise in elderly patients after Coronary Artery Bypass Grafting

Klebson Almeida¹, André Novo², Saúl Rassy Carneiro³, Leonel Preto², Eugénia Mendes²

1 – Uees José Álvares de Azevedo-Seduc pa – Brasil; 2 – School of Health, Polytechnic Institute of Bragança – Portugal; 3 - João de Barros Barreto University Hospital – Brasil



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INTRODUCTION

Coronary Artery Bypass Grafting (CABG) is one of the most commonly performed surgical procedures. During the postoperative period, the prolonged bed rest increases the possible occurrence of systemic complications, resulting from immobilization. Knowing that physical exercise balances the blood pressure and taking into account its benefits, we tried to analyze the hemodynamic behavior of the patient in PO after exercise sessions in the ICU.

OBJECTIVE

Check the effect of using an interval protocol with cycle ergometer; the use of physical therapy without the cycle ergometer and NIV, in hemodynamic variables (Blood Pressure, Heart Rate, Respiratory Rate and Oxygen peripheral saturation) in elderly patients, postoperative myocardial revascularization surgery in the Intensive Care Unit (ICU).

METHOD

30 elderly patients undergoing coronary artery bypass graft surgery, with postoperative in ICU selected randomly thus constituting three different groups.

MATERIALS USED:

- Cycloergometer brand - MASTER HOME, model ASK 901
- A multi-parametric monitor brand Drager Medical, Model Infinity Vista XL for the collection of HR, RR, BP and SpO₂
- Mechanical ventilator brand Newport Medical Model: E360Br
- Masks of Noninvasive Ventilation, Newport Medical brand
- Peak Flow brand Cardinal Health to analyze the peak expiratory flow
- Casio stopwatch manual of 8 memories with milesimal precision 1/1000

PROCEDURE FOR COLLECTING DATA

Before the application of protocols will be carried out the measurement of peak expiratory flow values (Peak Flow) before and after application of each protocol.

RESULTS

Results showed a significant increase in Peak Flow values in the three groups (before and after test), significant reduction of systolic blood pressure in group A and increase of respiratory frequency in group B.

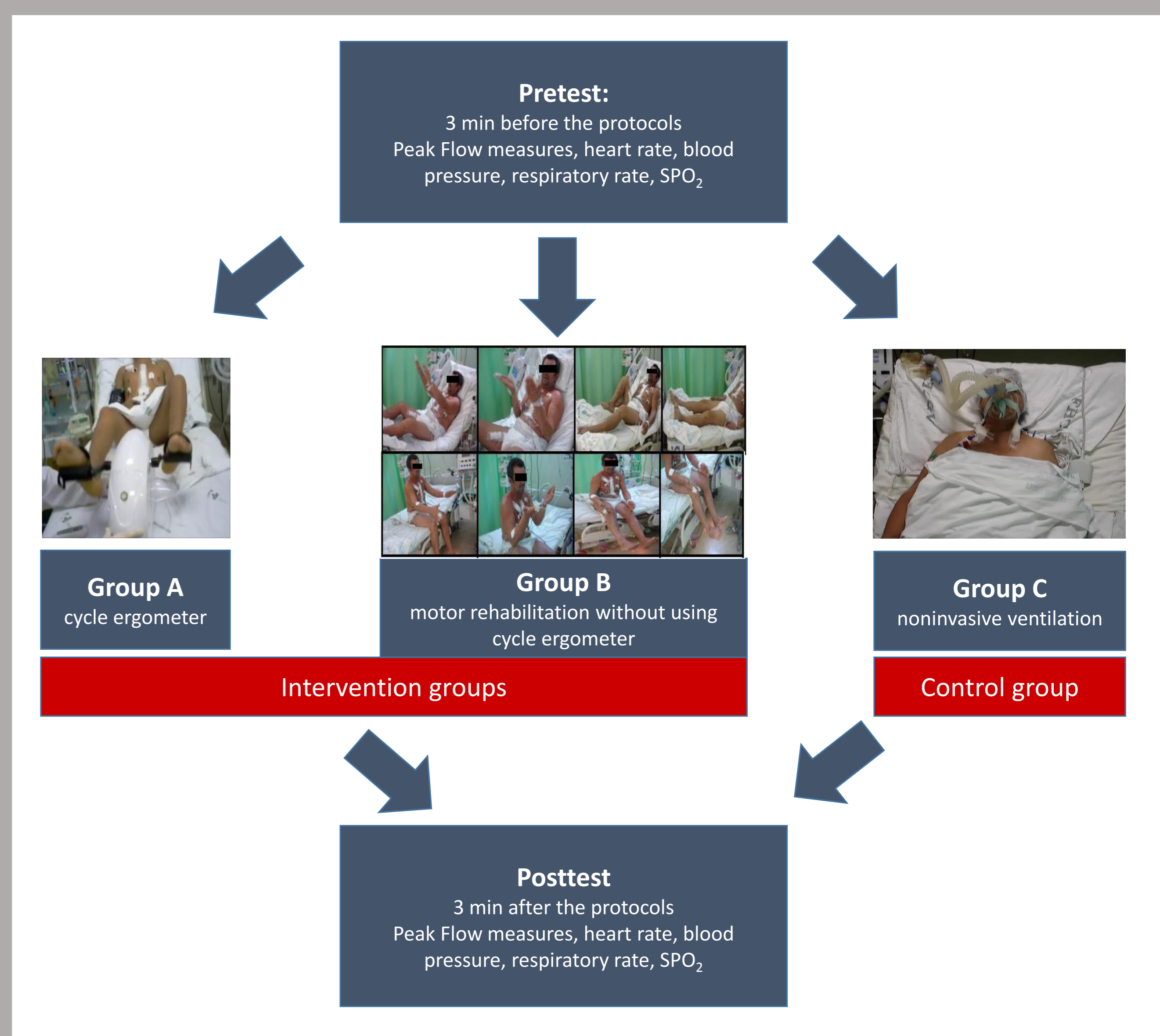
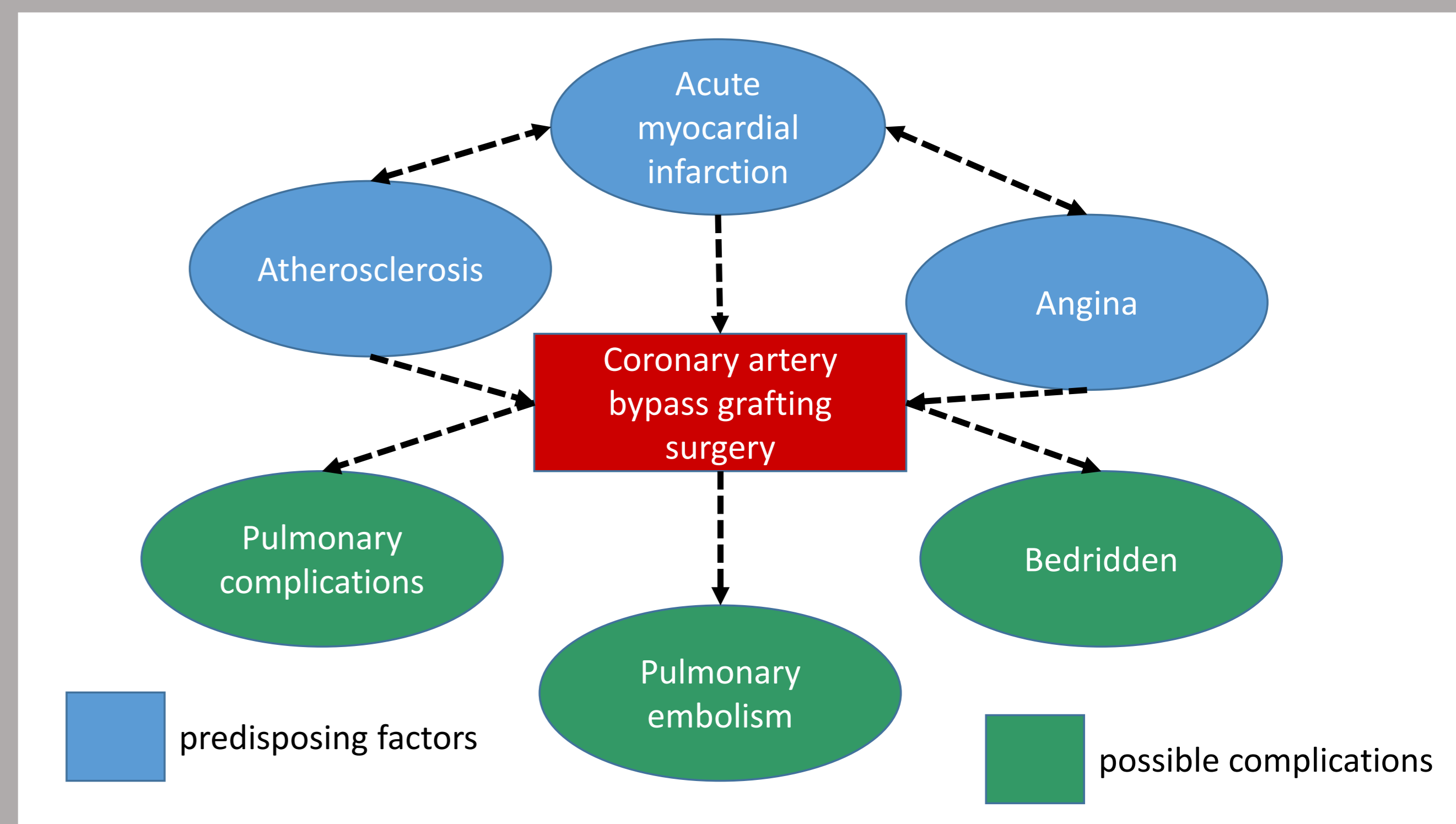
		Age (years)	Days of hospitalization
Group A	N	10	10
	Mean	68,1	2,4
	Std. Deviation	7,651	1,3
Group B	N	10	10
	Mean	65,3	2,4
	Std. Deviation	5,599	0,8
Group C	N	10	10
	Mean	64,5	2,7
	Std. Deviation	4,79	0,8

		Heart rate (bpm)		Systolic blood pressure (mm/Hg)		diastolic blood pressure (mm/Hg)	
		before	after	before	after	before	after
Group A	N	10	10	10	10	10	10
	Mean	87,85	87,7	122,7	124,2	65,5	62,6
	Std. Deviation	12,4	12,9	16,3	15,7	9,6	5,6
	p value	0,386		0,014		0,333	
Group B	N	10	10	10	10	10	10
	Mean	84,68	85,6	129,0	125,6	71,7	70,5
	Std. Deviation	11,2	11,2	23,2	20,9	9,2	9,8
	p value	0,241		0,721		0,799	
Group C	N	10	10	10	10	10	10
	Mean	85,51	82,4	134,2	135,8	68,7	70,7
	Std. Deviation	9,2	23,2	15,9	15,9	9,4	8,7
	p value	0,959		0,799		0,508	

		respiratory rate (breaths per)		SPO ₂ (%)		Peak Flow (L/m)	
		before	after	before	after	before	after
Group A	N	10	10	10	10	10	10
	Mean	20	19,3	95,2	95,2	150,6	168,4
	Std. Deviation	7,5	6,3	2,2	2,3	74,3	75,4
	p value	0,799		0,333		0,008	
Group B	N	10	10	10	10	10	10
	Mean	23	22,7	95,3	95,6	121,7	143,3
	Std. Deviation	4,0	5,2	1,8	1,5	60,5	61,0
	p value	0,017		0,066		0,005	
Group C	N	10	10	10	10	10	10
	Mean	21	28,8	94,1	99,9	150,8	172,8
	Std. Deviation	4,3	16,8	2,1	16,7	23,3	25,5
	p value	0,813		0,878		0,020	

CONCLUSION

It is concluded that early mobilization and exercise, with or without the exercise peddler, can be safe and performed in elderly patients after CABG in the Intensive Care Unit (ICU). Careful use of positive pressure in the noninvasive ventilation is needed due the effects on blood pressure and cardiac debit.



OBS.: Abnormal Physiological responses: HR > 70% of maximum predicted, > 20% decrease in heart rate, systolic blood pressure > 180 mmHg, > 20% decrease in systolic and diastolic blood pressure and SPO₂ <90%

IMMEDIATE CESSATION OF EXERCISE

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