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GOLD-X Case Series: Increment of Physical Activity and Home Exercises as Therapy on Elderly with Chronic Kidney Disease, Hypertension, Diabetes, Obesity and More

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Case Study: Background

GOLD-X is Geriatric Optimal Lifestyle Development on eXercise, a pilot program designated on sports medicine intervention as therapy in elderly. Physical activity and exercise can act as medicine almost in every condition, including Chronic Kidney Disease and other metabolic disease. Instead giving an oral medication, an exercise program is given to manage this medical problem. The sedentary condition can lead to worsen condition. Applying physical activity and exercise could impact the combine medical condition also promote healthy longevity and increment on quality of life.

Method

Structured tailored-made exercise was applied on a 68 years old lady with CKD and other metabolic disease (Figure.1) for 3 months. It consists of cardiopulmonary exercise, flexibility exercise and strengthening exercise. Physical fitness capacity, creatinine, blood glucose, HbA1C and blood pressure were used as evaluation parameters.

Result

The intensity of the exercise was done at medium not to low level. Mean of systole [127mmHg (SD±7,13)]-diastole [71mmHg (SD±4.85)] before exercise and systole [137mmHg (SD±7,49)]-diastole [77mmHg (SD±4.14)] after exercise. Mean heart rate before [61bpm (SD±7.33)], during [119bpm (SD±5,83)], and after exercise [69bpm (SD±4.56)] (Tabel.1). Heart rate was recorded in every supervised exercise (Figure.2). Subjectively and objectively no clinical symptoms, led to cardiovascular and complication of disease, were found. There was an improvement in the cardiovascular endurance function. Other parameters, such as body composition (1,8% body fat decreased), muscle strength and muscular endurance, are in the same category but with improvements in their value (Table.2).

Conclusion

Prescribing physical activity and exercise not only manage the disease but also improve the quality of life in elderly with CKD and other metabolic disease. By applying this method, patient also obtained the other benefit of exercise conjunction with healthy longevity.

GOLD-X Figure and Table

Figure 1. Methods and characteristic

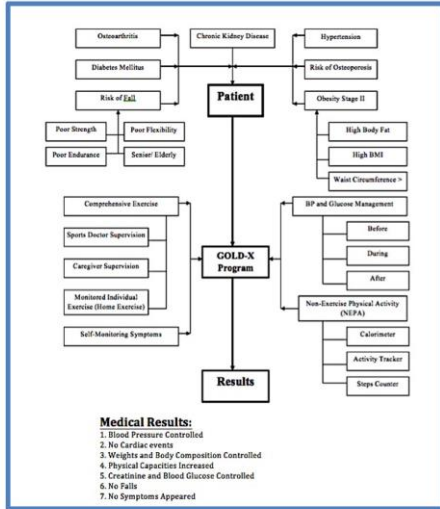


Table 1. Gold-X Monitoring Timetable

Weeks	Total Endurance Exercise	Total Strength Exercise	Total Flexibility Exercise	Mean Exercise Duration	Subjectivity	Objectivity	Mean Blood Pressure Before Exercise	Mean Heart Rate Before Exercise	Mean Blood Pressure After Exercise	Mean Heart Rate After Exercise
1	4	2	8 set	97	In normal range	In normal range	135/80	62	137/75	60
2	4	2	8 set	103	In normal range	In normal range	118/67	63	133/77	60
3	6	3	12 set	95	In normal range	In normal range	116/71	63	128/72	70
4	5	3	12 set	103	In normal range	In normal range	116/72	63	130/76	65
5	4	2	8 set	105	In normal range	In normal range	131/74	62	146/73	65
6	2	2	6 set	75	In normal range	In normal range	130/73	63	138/84	72
7	7	2	14 set	95	In normal range	In normal range	128/77	60	131/78	65
8	3	1	6 set	63	In normal range	In normal range	120/69	57	128/67	63

Table 2. Physical Fitness Capacities Progression

Physical Fitness Capacities Progress			
Body Mass Index	32.8kg/m ²	31.0kg/m ²	Improved 1.8kg/m ²
Fat Percentage	42.3%	40.7%	Improved 1.8%
Scratch Test	Right-side	25cm	24cm
	Left-side	19cm	20cm
Handgrip Test	Right-side	25kg	26kg
	Left-side	22.5kg	24kg
Plank Test	92 seconds	122 seconds	Improved 30 seconds
6-Minutes Walking Test	548.1meters	610 meters	Improved 61.9 meters in distance

Figure 2. Heart Rate Monitoring during Exercise

