

Starting and managing an intradialytic exercise program

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Abstract

In recent years, scientific literature has demonstrated numerous improvements in physical, vocational, and emotional outcomes from an intradialytic exercise program for end-stage renal disease patients. Despite documented benefits, most dialysis clinics have not moved to incorporate exercise for their patients. This could be due to many factors including lack of patient interest and/or the lack of information on how to get an exercise program started. This article describes how the University of Virginia Renal Services incorporated an exercise program and has found success with adherence to the program from staff and patients. With proper commitment from administration and staff, an exercise program for ESRD patients can become a reality and a standard treatment of care for dialysis patients.

Introduction

In recent years, intradialytic exercise programs have gained interest from nephrologists and dialysis clinics across the country. However, exercise for dialysis clinics is still not seen as a standard therapy, even though scientific literature shows positive outcomes for intradialytic exercise.¹⁻⁵ The goal of this article is to define the components needed to begin and manage an effective intradialytic exercise program.

Benefits of exercise

Research on exercise and dialysis performed for close to three decades has clearly defined dialysis patients as more

sedentary than the normal population, further compromising their overall health.^{1-5,7,8} Painter et al. has dedicated a large amount of research showcasing the dramatic benefits of exercise and physical activity—specifically for dialysis patients—that result in cardiovascular improvements in physical functioning, self-reported physical functioning, and quality of life issues (see commentary from Dr. Painter as part of this section on rehabilitation, p. 52). According to Painter, “Adoption of routine counseling and encouragement for physical activity has the potential to improve outcomes, improve physical functioning, and optimize quality of life and overall health of dialysis patients.”² Although positive exercise benefits are well documented for patients on dialysis, there appears to be significant resistance for dialysis clinics to start an exercise program. It is unclear why this resistance exists, however, fear of injury and lack of staff time are often mentioned.

The benefits of exercise for dialysis

patients have been demonstrated both in the home environment (while not on dialysis), as well as exercise training during the dialysis treatment (intradialytic exercise). The intradialytic exercise typically has used stationary cycling as a mode of exercise; however, strength and resistance training is possible during the treatment. Contrary to dialysis unit’s fears, exercise during the treatment does not interfere with the treatment, and often the patients are more stable hemodynamically. They experience less cramping and/or hypotensive episodes, and are overall more tolerant of their treatments when they exercise throughout. In addition, there is new evidence that exercise during the dialysis treatment may improve clearances by opening up vascular beds in the working muscles, exposing more tissue to the dialysis procedure.⁷ Parsons et al. recently have demonstrated improvements in dialysis adequacy and physical functioning also.⁸

Components needed to start an exercise program

There are several important components needed to start and manage an exercise program in dialysis units. First and most important, unit administration and staff must support the program. The University of Virginia Renal Services has, for example, added the exercise program into staff job descriptions. Also added are exercise orders to the unit policies and procedures manual. The UVA nephrologists are also advocates of the program and have encouraged their patients to become more active during their treatments. The UVA administration has required daily exercise encouragement by adding an order to the daily service charting that needs to be checked off by staff before the patient completes their treatment. Although it is helpful to have a clinically trained exer-



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cise physiologist available to oversee and manage the program, a staff member who has an interest in exercise could manage the program. The advantage of having an exercise physiologist relates to someone who can design specific exercise “prescriptions” for each patient. The main responsibilities for an exercise physiologist is to ensure each patient has an exercise program that includes endurance, strength training, and flexibility exercises in the exercise prescription if tolerated. All patients should be assessed for exercise; however, most patients are unable to perform all three components of exercise and

affecting his/her ability to use a pedaler (may be able to use hand and/or leg weights)

- ▶ Patients with compromising cardiac profiles (these patients would be referred to cardiac rehabilitation)
- ▶ Patients that are hemodynamically unstable during the dialysis treatment
- ▶ Patients with severe bone disease
- ▶ Body temperature > 101.0° F, 38° C)
- ▶ Patients with a poorly functioning catheter

Similarly, the “Exercise Champion” may be given some time to devote to the

is the lack of federal and local reimbursement for such programs. However, funds can be raised through hospital or medical center grants, patient memorial funds, patient donations, and community events to pay for exercise equipment such as floor pedalers, hand/leg weights, treadmills, and other equipment. To keep a program going, the dialysis staff members must be consistent and diligent in encouraging the patients to exercise. Carlson et al. outlines staff responsibilities to exercise for dialysis patients, including how the staff can influence patients, administrative roles, and assessing resources.¹²

Having a physician order to encourage and offer exercise should result in staff members being consistent in offering exercise to their patients. Dialysis patients obviously have many factors that may result in irregular participation in exercise. Thus, just as all of us in the “apparently healthy” population need motivation and encouragement to exercise regularly, patients may need extra encouragement. Continuous education, counseling, and reinforcement with the patients will be needed to make exercise a routine part of the dialysis treatment.

Patient interest programs

Developing clinic-specific motivational programs may enhance patient participation. These projects are very popular at UVA and have resulted in a friendly competition within the patients. The programs UVA use are “Cycle Across America,” where a map of the United States is posted on the patient bulletin board and a designated route across the country and back is highlighted for the patients to follow. Miles are awarded for every session a patient exercises on dialysis. The more exercise the patient does (cycle, leg/hand weights, etc.), the more miles awarded. The program usually lasts three months and every patient that makes it back to the original point will receive a prize.

Another popular program is the “12 Days of Exercise.” During December of every year, patients are encouraged

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are encouraged to do any physical exercise they can during the treatment. In addition, the exercise physiologist coordinates with nephrologists to clear the patient to start exercising, as well as establishing inclusion and exclusion criteria into the exercise program for patients.

Inclusion criteria for exercise consists of the following:

- ▶ Patients with no musculoskeletal impairments
- ▶ Patients that sustain stable dialysis treatments
- ▶ Patients whose vital signs (blood pressure, glucose levels) are within safe guidelines for exercise (blood pressure < 200/100 mmHg, glucose levels 100-300 mg/dL)
- ▶ Patients with no concurrent medical conditions that may contraindicate exercise
- ▶ Patients with stable cardiac profiles
- ▶ Patients that want to exercise

Exclusion criteria for exercise contain the following:

- ▶ Patients with functional limitations

program, such as how several clinics designate a staff person to oversee anemia management or a home dialysis program. In the end, however, all staff must participate and be trained to assure that all know the benefits of exercise to their patients, how to get a patient started on exercise, how to recognize exercise termination criteria and motivational techniques, and do not just rely on one person to run the program. All these subjects are reviewed and are available from the Life Options Rehabilitation Council (Life Options). These references include an exercise guide for nephrologists,¹⁰ an exercise prescription guide,¹¹ and a guide for patients and exercise⁹ found on the Life Options website.¹⁴ Staff members from all disciplines including MDs, nurses, social workers, dietitians, patient care technicians, and even support staff must be invested in the program for it to be successful.

Obstacles to starting an exercise program

The greatest challenge in incorporating an exercise program in a dialysis unit

to exercise at least 12 days during that month (out of a possible 13 or 14 dialysis days for patients that run 3 dialysis sessions per week). Again, every patient that completes 12 days will receive a prize. Some dialysis units divide their units into bays or pods, and a competition between the patients between these pods are also very popular. The UVA Renal Services has taken the “American Idol” theme and applied it to the dialysis exercise program. In essence, the patients who complete the most days of exercise in a given amount of time will be the finalists for the Renal Idol, and whoever completes the most amount of exercise between all the finalists will win the title



UVA OUTPATIENT SITFIT EXERCISE PROGRAM

of Renal Idol. Lastly, a popular program that is instituted at UVA Renal Services is a “Staff-Patient” Buddy Program where a certain number of patients are “buddied” up with a staff member. Together, they work as a team, and the team with the most amount of exercise will win a prize. This program is especially popular because it advocates staff members to become physically active.

Monitoring progress

Another way to motivate patients and provide positive feedback, while monitoring and documenting progress, is simple physical performance tests that can be done quarterly, every six months, or every year. Tests such as the six-minute walk test, a gait speed test, and sit-to-stand test can be used to evaluate initial patient physical ability and again to eval-

uate patient progression. These tests are measures of lower extremity functioning and are widely used in the elderly population and have been well tested in the EPESE study.⁶

Documentation

The UVA SitFit Exercise Program¹³ divides the responsibility for monitoring and documentation up by pods or bays (a small group of dialysis stations). In each pod/bay, we have an exercise book that references all the important information that the staff members of that bay/pod can use to help the patients exercise. These books include the following materials:

- ▶ Exercise daily set-up sheet (vital signs, etc, chair/pedaler positioning)
- ▶ Pertinent research papers
- ▶ Exercise pedaler/hand and leg weight protocol
- ▶ Stretching guide
- ▶ Patient inclusion/exclusion criteria for exercise
- ▶ Exercise termination criteria
- ▶ Weight training guide
- ▶ Rating of Perceived Exertion (RPE) scale to measure exercise intensity
- ▶ Exercise progress/communication notes
- ▶ Individual exercise prescriptions (by exercise physiologist) outlining each patient’s tailored exercise program.

Conclusion

Intradialytic exercise programs are important to enhance patient physical functioning, exercise capacity, and improve overall health. This should become a standard of treatment for all dialysis units. Although having an exercise professional to run the program would be ideal, with the available resources to the dialysis community, an exercise program could become a reality managed solely by the dialysis staff. The research on exercise and dialysis clearly shows a positive benefit for patients with ESRD. With a clinic-wide commitment, an exercise program can be created and managed with positive physical and emotional outcomes for their patients. ♦

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