

Role of Physiotherapy in Post Kidney Transplant Infective Myositis: A Case Study

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Abstract: ***Background and Aim:** We aimed to investigate the effect of physiotherapy in prevention of infective myositis in post kidney transplant recipient. **Case Description:** We reported a case of 46 year old female who had complain of difficulty in moving both lower limbs since 2 months, unable to sit without support and difficulty in activities of daily living. **Conclusion:** We concluded that the 6 weeks of supervised exercise protocol improves the muscle strength, physical function and reduces fatigue in prolong bed ridden post kidney transplant recipient with infective myositis. **Clinical Significance:** Physiotherapy plays significant role in myositis.*

Keywords: Myositis, post kidney transplant, physiotherapy.

1. Introduction

Infective myositis may be caused by a broad range of bacterial, fungal, parasitic and viral agents. Myositis is an inflammatory condition of muscle and group of rare condition that can cause muscle to become weak, tired, painful lead to immobility and bed reddeny. The diagnosis of myositis is suggested by the clinical picture, radiologic imaging and the etiologic agent is confirmed by microbiologic or serologic testing. Therapy is based on the clinical presentation and the underlying pathogen. Exercise training after acute exacerbation was safe, useful and early intervention can partially prevent muscle atrophy, lake of physical activity and various level of disability however it may differ on a case by case bases and each individual. Initially isometric exercise and gentle ROM exercise may be safe at starting point and then focus on early mobilization in the bed and out of bed should be the goal.

2. Case Report

Patient Information

A 46-year-old female had history of snake bite after that she diagnosed with chronic kidney diseases than was on

conservative management in January 2022 she underwent cadaveric renal transplantation. After one year of transplantation she diagnosed with urinary tract infection, fever and Avascular necrosis of hip for that pus removal was done in march- 2023 than after she was bedridden was 2 months and after that was referred for physiotherapy with chief complaint of difficulty in moving both lower limbs since 2 months, unable to sit without support and difficulty in activities of daily living.

Clinical Presentation:

- On the day of assessment patient was conscious, oriented and following commands. She was maintaining 98% SpO₂ on room air, blood pressure 128/84 mmHg, respiratory rate was 23 bpm, heart rate was 86 bpm. She was bed ridden since 2 months.
- Physical examination: The patient was found to have reduced range of motion, reduced muscle strength in bilateral upper and lower limbs (>3/5) and limitations in activities of daily living (FIM Score: 28/126).

3. Interventions

Week- 1	<ul style="list-style-type: none"> • Active exercise of available ROM and end range passive exercise of both upper limb and left lower limb. • Passive ROM exercise of right lower limb. • Stretching of large muscle. • Supported sitting in bed for 5-7 minutes • All exercises corporate with deep breathing and breath-out. • Incentive spirometry initiated with 600 cc with hold.
Week 2-3	<ul style="list-style-type: none"> • Sitting at edge of the bed with minimal support 5-7 minutes. • Balance activity sitting • Trunk-rotation exercises. • Bridging and core muscle strengthening exercises. • Standing with full support as patient buckling their knee. [3-5 minutes] • Incentive spirometry with steady hold 1200 cc.
Week 4-6	<ul style="list-style-type: none"> • Walking around the bed with minimal assistance. • Spot-marching with minimal assistance. • Sitting without support. • Upper limb Strengthening exercise with 1 liter water bottle.

4. Result

The patient was discharged from the hospital at a modified independence level (FIM Score: 69) 42 days after her admission. Her TUG test improved to 4 second and handgrip strength, which was measured using a handheld dynamometer, improved markedly in the left hand (Fig 2). Inspiratory capacity which was measured via an incentive spirometer improved to 1200cc/s.

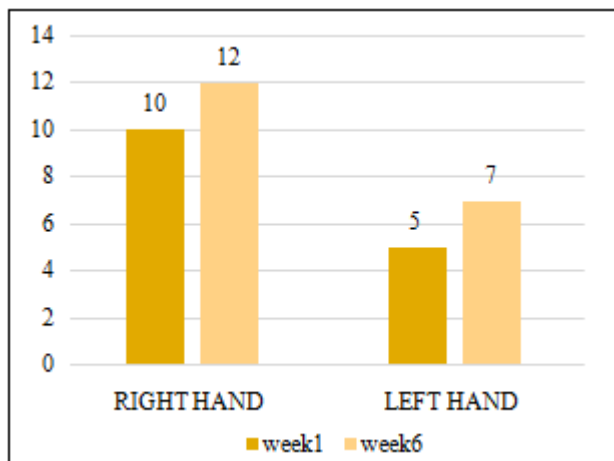


Figure 1: Graph showing increment in handgrip strength

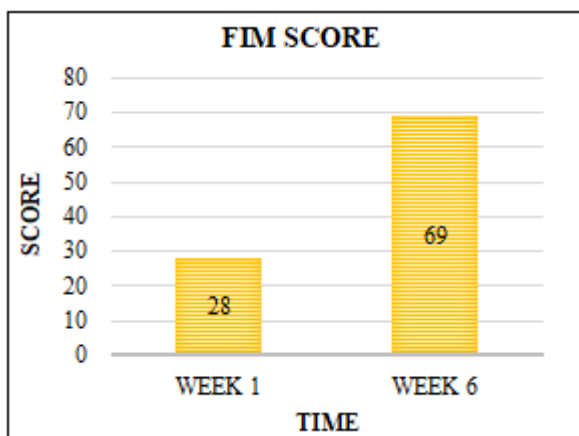


Figure 2: Graph showing increment in FIM Score

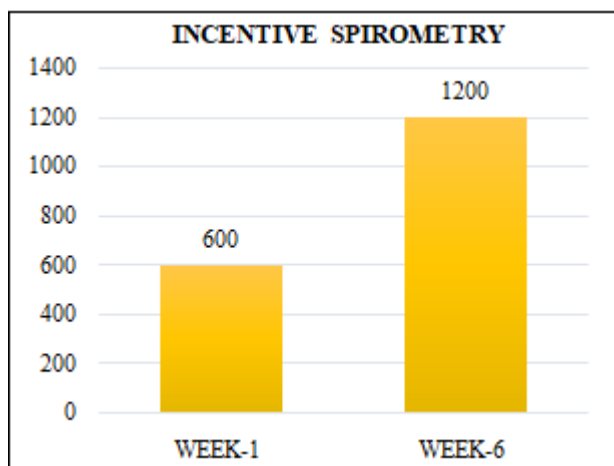


Figure 3: Graph showing increment in incentive spirometry

5. Discussion

- In presented case multidrug resistant gram negative bacterial pathogen *Pseudomonas Aruginosa* was detected for which Inj. Colistin was started along with other antibiotics which has nephrotoxic and neurotoxic side effects.
- A variety of exercise programmes have been evaluated in patients with myositis, including **resistance training** (ranging from easy to intensive), a **combination of resistance training and aerobic exercise** and exclusively aerobic exercise. Home exercise alone or in combination with exercise in a hospital setting has been used in several studies and some have used supervised hospital-based exercise. Bedridden patients are usually kept in bed for **long periods**, presenting **numerous motor problems** caused by **immobility, rapid reductions in muscle mass, bone mineral density and physical impairment**. Other problems, such as pressure sores, **muscular weakness/atrophy, muscular shortness, respiratory complications, blood circulation difficulties and bone demineralization** may develop and result in long recovery processes. Studies have shown that tailor made **progressive exercises** along with **nutritional support** can **prevent or reverse** the physiological changes in cachexia and sarcopenia. Early mobility in the bed and out of the bed with gradual physiological and hemodynamic stress in **supervised environment** proved beneficial in our case. **Gravitational forces** on musculoskeletal system and self-body **weight bearing exercises** improve the muscle mass and function.

6. Limitations

- Patient was **not evaluated** for the muscle strength and physical functionality **before transplantation**.
- Muscle mass was not evaluated by **any objective measures**.
- The **nutritional status** of patient was not taken into consideration during rehabilitation.

7. Conclusion

From this case study, we concluded that **the 6 week of supervised exercise protocol improve the muscle strength, physical function and reduce fatigue** in prolong bed ridden patient with infective myositis in post kidney transplant recipient.

Follow Up

Patient had been re-educated for **home based exercises** with self-monitoring and in contact with physiotherapist. Also she has been advises to follow up regularly in physiotherapy OPD with each post-transplant visit at Institute.

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