

Effect of Prenatal Physiotherapy on Rheumatoid Arthritis

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ABSTRACT

Background and Purpose: Rheumatoid arthritis is a chronic progressive inflammatory joint disease that leads to irreversible damage to the joint. It often affects women of childbearing age. Based on the evidence, the disease activity is under control during pregnancy in many cases. The purpose of this case study was to document the effect of physical therapy interventions (prenatal physiotherapy) on the disease severity in a pregnant lady with rheumatoid arthritis. RADAI 5 scale was used.

Case description: The patient was a 32-year-old pregnant female who was enrolled for virtual prenatal physiotherapy sessions. The intervention of the client included upper and lower limb strengthening, breast lifting or chest toning exercises, pelvic floor muscle training, low impact cardio exercises, postural and flexibility exercises. The patient received physiotherapy thrice a week from her 23rd week of pregnancy to the 35th week. The patient's RADAI 5 score improved from 28 to 15 by the end of the 35th week. There was a reduction in joint stiffness and pain after a few weeks of the sessions.

Conclusion: This case report demonstrated the purpose of how prenatal physiotherapy sessions could be beneficial to help a pregnant lady with rheumatoid arthritis improve her quality of life. Further research should focus on the assessment of fatigue and functional activities in addition to the disease severity for pregnant patients with rheumatoid arthritis.

Keywords: Prenatal physiotherapy; Rheumatoid arthritis; pregnancy; physical activities.

INTRODUCTION

Rheumatoid arthritis is a systemic autoimmune disease characterized by the involvement of multiple joints. There occurs a chronic inflammatory

process that leads to progressive destruction of the osteoarticular system and changes in the organs. RA often affects women more than men. It occurs in approximately 5 in 1000 people and it can lead to severe joint damage and disability. Early diagnosis is very much essential to avoid severe disability.

Pregnancy in patients with RA can be a challenge for some patients. As per the literature, RA is known to improve during pregnancy and it flares up after delivery. Studies have also reported that patients who have seronegative RA are more likely to improve during pregnancy than seropositive patients. Some studies state that pregnancy is the only natural situation where spontaneous

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improvement is seen in RA.

Prenatal physiotherapy is proved to be effective. It has several benefits such as it helps in maintaining cardiovascular fitness, combating fatigue, promoting healthy weight gain, enhancing flexibility prevents common conditions of pregnancy such as low back pain and gestational diabetes. Various exercises are performed trimester-wise under the supervision of the physiotherapist.

METHODOLOGY

A client aged 32 years with juvenile rheumatoid arthritis (JRA)(diagnosed at the age of 19) was pregnant for 23 weeks. She had pain in multiple joints of the body and during the time of flare-up, she even got bedridden for a couple of days. She was taking intermittent physiotherapy treatment for all these years. Other modes for managing her symptoms such as Ayurveda and homeopathy were also tried but there was no benefit so she started allopathy management. She is on medical treatment for RA for 12 years. Her doctor prescribed steroids whenever required to manage the disease. She met with a car accident in 2013 during which her cartilage was affected. She reported the symptom of swelling and pain on the right knee joint after it and her mobility was not affected. Slowly the cartilage damage got worsened over the period and she became immobile due to which the decision to undergo total knee replacement was taken in 2019. She believes that her symptoms of RA were triggered after the accident.

All her ultrasound and blood reports were normal. This was her first pregnancy and all her rheumatology drugs (Methotrexate, Saaz DS) were stopped by her doctor except hydroxychloroquine when she conceived. At present, she was taking this medicine on alternate days for managing the symptoms of rheumatoid arthritis.

Her detailed prenatal assessment was taken during the enrolment on the 23rd week of pregnancy in the prenatal physiotherapy virtual session. Her last menstrual period was on the expected due date. She had the flare-up of the disease only once during her pregnancy before she enrolled for the class during which she developed boutonniere deformity in her middle and ring finger of both hands. Splint / stretches / intrinsic muscle exercises / hydrocollator packs were prescribed by her local physiotherapist and thus the deformities did not worsen and the client was functionally independent.

Before commencing the sessions RADA 5

(rheumatoid arthritis disease activity index) questionnaire was applied. RADA 5 comprised of 5 items in a Likert format from 0 to 10. It is proved to be a sensitive and reliable tool for routine examination of rheumatoid arthritis. It is self administered and assesses the global activity of the disease in the last six months. It monitors the disease activity in terms of joint swelling, tenderness, morning stiffness, and overall health.

The patient was informed about the study and written consent was obtained.

Prenatal physiotherapy sessions commenced in July 2021. Three sessions were taken every week for about an hour. The sessions lasted till she completed 35 weeks of gestation in mid-October. At the end of her 35th week, RADA 5 was applied.

INTERVENTION

Prenatal virtual physiotherapy sessions were started from the 23rd week of pregnancy and lasted till the 35th week. Each session consisted of breast lifting exercise, upper and lower limb strengthening using dumbbells or therabands, specific back strengthening, chest toning workout flexibility exercises, low impact cardio workout, and quadriceps muscle strengthening. Few positions such as kneeling and quadruped were avoided as the patient had a history of TKR and her knee ROM on the right leg was restricted. The virtual sessions were conducted three days a week for one hour for 12 weeks and each session was concluded with different breathing exercises like pursed-lip, glossopharyngeal and diaphragmatic breathing. The client was attending prenatal physiotherapy quite regularly throughout her pregnancy. The physiotherapy sessions were not continued after the 35th week as the client was diagnosed with mild mitral valve prolapse and the movements of the baby were also increased significantly which in turn reduced the heart rate of the baby so the doctor advised terminating the prenatal physiotherapy sessions.

RADA 5 was taken pre and post-session and analyzed further.

RESULT

Prenatal virtual physiotherapy sessions of active exercises and stretches were given to the client who had a history of rheumatoid arthritis for 12 years. RADA 5 tool was used to know the disease activity before commencing and after completing

prenatal physiotherapy sessions at the 35th week of pregnancy. It is proved to be a useful scale for activity assessment.

Table 1: Treatment protocol:

Week	Treatment	Sets
1-3	Sitting position:	
	Warm-up (5min)	5 reps of each
	Active neck exercises	5 reps of each
	Shoulder shrugs and rotation	10 reps of each
	Chest open exercise	10 reps of each
	Side stretch	10 reps of each
	Butterfly stretch (with hold)	10 reps of each
	Supine lying:	
	Pelvic bridging (with hold)	10 reps of each
	Quadriceps setting	8-10 reps of each
	Active hip abduction	10 reps of each
	Side-lying:	
	90 degrees leg stretch (withhold b/l)	10 reps of each
4-6	Sitting position:	
	Warm-up (5 min)	
	Isometric neck exercises	5-6 reps of each
	Breast lifting exercises	10 reps of each
	Active shoulder exercises	10 reps of each
	Supine lying:	
	Pelvic bridging (with 5-second hold)	10 reps of each
	Isometric hold of hip adductors (pillow press)	10 reps of each
	Elbow against the floor (hold)	10 reps of each
	Side lying:	
	Multiple angle isometrics for hip abductors	10 reps each
	Active leg raise till 60 degrees without hold	10 reps each

Outcome measures:

- RADA1 5 questionnaire

question is graded into 1 to 10 and the total score is divided by 5. The final score is to be categorized into remission, mild, moderate, or severe disease.

DISCUSSION

This case report describes the client of pregnancy with rheumatoid arthritis who responded favorably to a prenatal exercise program. Antenatal exercises are proved to be effective in the prevention of gestational diabetes, assist to avoid excessive weight gain/preterm labor, enhance cardiovascular strength and overall fitness during pregnancy. In this study, the disease severity scale RADA1 5 is applied on the pregnant lady before commencing the prenatal physiotherapy sessions and after the 35th week of pregnancy who was diagnosed with rheumatoid arthritis before 12 years. This scale has good psychometric properties and is routinely used on RA patients. It has five questions in which each

CONCLUSION

Prenatal physiotherapy creates a positive effect on the patient with chronic rheumatoid arthritis and improves the quality of life during pregnancy. Further research is needed to check the functional status and fatigue of the patients.

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