




Optimising Rehabilitation Strategies for Postpartum Elderly Gravida with In Vitro Fertilisation Conception

Purva Gulrandhe¹ , Priyanka Telang² , Simran Jaiswal³ 

¹ IIHMR University, Jaipur, Rajasthan, India

² Department of Community Health Physiotherapy, Dr Naikwadi College of Physiotherapy, Nashik, India

³ Department of Community Health Physiotherapy, Ravi Nair Physiotherapy College, Datta Meghe Institute of Higher Education and Research, Sawangi Meghe, Wardha, Maharashtra, India

Received: 2023-12-10 / Accepted: 2023-12-25 / Published Online: 2023-12-25

Correspondence

Purva Gulrandhe,

Address: IIHMR University, Jaipur,
Rajasthan

E-mail: purvagulrandhe456@gmail.com

Dear Editor,

As per World Health Organization (WHO) data, 5-15% of couples of reproductive age experience infertility. In vitro fertilization-embryo transfer (IVF-ET), which initially appeared at the end of the twenty-first century, is not only a core component of assisted reproductive technology but also an important way to treat infertile patients in modern medicine, giving the majority of infertile patients fertility hope [1]. Advanced maternal age (AMA) is a major clinical and social problem. At present, there is a significant increase in the percentage of women who delay pregnancy until their late third or early fourth decade of life [2]. Many elderly women prefer to use IVF to have children. However, it has been observed that the age of the female was one of the key determinants limiting fertility and reproductive results [3]. The International Council of Obstetricians and Gynaecologists introduced the term “elderly primigravida” in 1958 to describe women over the age of 35 who were embarking on their first pregnancy. Pre-eclampsia, gestational diabetes, foetal abnormalities, and premature birth have all been identified to carry an increased risk of maternal and foetal morbidity during the same time [4]. Women of advanced maternal age are frequently considered as if they need the level of care required for any high-risk pregnancy, and they are given special attention even when there is no scientific basis for it and no medical issues are evident. However, because of pre-existing and pregnancy-related morbidity, as well as high maternal expectations, these women require more intervention throughout pregnancy and delivery [5]. Advanced maternal age is linked to several financial, social, and physical problems for the mother as well as for the foetus [2]. Some studies discovered that elderly gravida were more likely to have a child with Down syndrome, as well as a higher chance of miscarriage and hypertension. However, the chances of requiring a Caesarean section, having a preterm or low-birth-weight baby, having a stillbirth, or having multiple births were not as well determined [5,6]. Intense physical change occurs during pregnancy, and many women experience significant emotional upheaval during this time. While improving the chances of favourable maternal and newborn outcomes during pregnancy remains the major objective of prenatal care, emphasis should also be given to how pregnancy-related conditions might influence a woman’s life [7]. The loading and position of the vertebral column, as well as the muscular forces along it and in the



weight-bearing joints, alter throughout pregnancy. Physiotherapy is vital in obstetrics, both during pregnancy and after delivery [8,9]improper gait and difficulty in carrying out activities of daily living since the patient did not show any concern initially. Assessment, medical history and treatment have been discussed in this case study. Conclusion: The case study concluded that there is a significant effect of the given therapeutic intervention on the muscle strength, muscle re-education and Activities of daily living (ADL. Hence, we present this letter to the editor of post-partum elderly gravida with IVF conception with gestational hypertension and gestational diabetes mellitus with cervical stitch in situ with its structured physiotherapy management.

Patient Information

A 51-year-old woman and her 57-year-old husband opted for IVF trials because of advancing age, intending to conceive a child. The couple initiated infertility treatment in 2019. The menstrual history was regular, with a 30-day cycle lasting four 4 days, and the flow was of moderate intensity. Hysteroscopy revealed bilateral tubal blockage. IVF trials were carried out, resulting in conception during the third attempt; however, miscarriage occurred during the second month of pregnancy. Additional trials were pursued, leading to the successful conception of the fifth attempt. During pregnancy, the patient developed gestational diabetes and hypertension. As a result, a cervical stitch was placed at the 20th week of gestation. At 33.5 weeks of pregnancy, the patient underwent an elective lower segment caesarean section, giving birth to a baby girl weighing 2.3 kg. Two days after delivery, physiotherapy was recommended. She reported experiencing pain at the suture site, as well as upper and lower backaches, along with urinary incontinence.

Clinical Findings

The patient exhibited a well-nourished physique with a mesomorphic body build. Her hemodynamic condition was stable. Upon observation, the patient displayed a forward head posture, thoracic spine extension, anterior tilt of the pelvis, and increased curvature of the lower back. Waddling gait was also observed. Palpation revealed grade 2 tenderness and pain level of 6/10 at the suture site (Pfannenstiel incision) on the NPRS scale. During the general examination, chest expansion was limited, diastasis recti measured 3 cm in width, and pelvic floor strength was assessed as Grade 1. The strength of the upper abdominal muscles was graded as Fair + (6), whereas the strength of the lower abdominal muscles was graded as Fair (5).

Therapeutic Intervention

Medical Management

The medical treatment strategy featured a combination of injections and medications to meet particular health concerns. The following drugs were administered to the patient as injections: tax, metro, pan, tramadol, amikacin, augmentin, and lomoh. The patient's treatment regimen included multiple medications in addition to injections. Metformin, Augmentin, Metro, Pan, Chymorol Forte, and Limcee were among these medications. Every medication had a distinct function that helped to manage the patient's medical condition and aid in her recovery. A Jonac Suppository was also used as part of the therapy plan to improve medical management approach.

Physiotherapy Management

Patient Counselling

The patient was given information about the altered physiological changes that occur in the female body after pregnancy, as well as age-related transitions. The physiotherapist conducted a discussion about the value of regular exercise and how it affects mental and physical health. The patient was given practical advice on nursing practices as well as instructions on splinting measures to alleviate pain at the suture site. In addition, the family received education on postpartum depression, which provided them with the knowledge to assist the patient in making these life-changing changes.

Management

Day 1 to Week 1

The patient was given guidance on multiple techniques to help with her rehabilitation throughout. These included teaching the splinting technique, forced expiratory technique, and applying an ice pack to the suture site for 10 minutes three times a day for pain relief. Correct breastfeeding demonstrations were given. Static back and abdominal exercises with 10 repetitions twice a day were included in the patient's exercise program to enhance muscle strength. Additionally, rhomboid stretching (10 repetitions) was used to alleviate the upper back pain. Cervical range of motion exercises (10 repetitions per set) were also performed. The patient was advised to avoid rotational and side flexion movements to prevent strain on the diastasis recti abdominis muscle. Instruction regarding pelvic floor contractions was also provided. Breathing exercises, including thoracic expansion (Figure 1) and deep breathing, were included (10 repetitions for two sets). Ankle-toe movements (20 repetitions

twice daily) were introduced to prevent complications and postural correction exercises were initiated.



Figure 1. Patient performing thoracic expansion exercise



Figure 2. Patient performing pelvic bridging

Week 2 – Week 4

Continuing the patient's progression, deeper breathing exercises, including deep breathing and diaphragmatic breathing (10 repetitions for three sets daily) were introduced. Kegel exercises (the hold relaxation technique) were taught for pelvic floor strengthening. Pelvic tilting, hip adductor and abductor rolls, and pelvic bridging (Figure 2) were included, each with a 5-second

hold for 10 repetitions once a day. For diastasis recti, transverse abdominis contractions with a 5-second hold for 20 repetitions were incorporated. Bilateral upper- and lower-limb mobility exercises were introduced, accompanied by stretching exercises and strength training. Postural correction exercises remained constant.

Week 4 – Week 6

Progression was seen in the Kegel exercises, with the addition of pelvic bridging with hip roll, a combination of hip adductor and abductor rolls, and hook-lying hip rolls, each with a 10-second hold for 10 repetitions. Core strengthening was heightened along with ongoing breathing exercises. Stretching exercises were maintained with a 10-second hold for three repetitions twice daily. Gait and balance training was continued.

Week 6 – Week 8

Aerobic exercises commenced, preceded by a 10-minute warm-up and cool-down session. Core strengthening, postural correction, and Kegel exercises were also performed. Quadruped, opposite arm and leg raises, side bends, leg lowers, neck stretches, and cat and camel exercises were introduced.

Home Exercise Program

For the patient's home exercise regimen, warm-up and cool-down sessions included low-impact aerobics and modified yoga or pilates. Additionally, running/jogging and resistance training were incorporated for at least 20 minutes, three days per week.

Follow-up and Outcomes

The patient underwent assessment for postnatal depression using the Edinburgh Postnatal Depression Scale, and functional activity was graded using the FIM Scale. Pelvic floor grading, mid-stream-stop flow test, and abdominal Manual Muscle Testing (MMT) were used to evaluate pelvic floor and abdominal muscle strength, respectively. The Numeric Pain Rating Scale (NPRS) was used to gauge overall pain levels. A manual technique was applied to grade the diastasis recti. In summary, there was a noticeable moderate improvement following treatment. The patient was advised to return to the rehabilitation clinic over a follow-up period of three weeks. However, since the patient had relocated to another city, a home exercise program was prescribed. A detailed breakdown of the scores for each outcome before and after the treatment is shown in Table 1.

Table 1. Scoring of Outcome Measures

Serial number	Outcome Measure	Pre-treatment	Post-treatment
1.	Edinburgh postnatal depression scale	8	2
2.	FIM	70	122
3.	Pelvic floor grading	1	4
4.	NPRS	6	1
5.	Diastasis recti	3cm	1cm
6.	Upper Abdominal MMT	Fair + (6)	Good (8)
	Lower Abdominal MMT	Fair (5)	Good + (9)
7.	Mid-stream stop flow test	1	3

DISCUSSION

Physical activity during and after pregnancy is an important aspect as many physical and emotion changes taken place in women body, Ana Victoria Montoya Arizabaleta et al. conducted a randomized trial on 64 pregnant women to study the effects of a 3-month supervised exercise program and came to the conclusion that primarily aerobic exercise during pregnancy enhances health-related quality of life [7]. After a caesarian section, twenty women participated in a pilot study by Qurat Ul Ain et al. to evaluate the pain relief and functional activities following the procedure. The results of the study showed that postnatal exercises increase mobility and alleviate pain in post-natal period [10]. Diastasis recti abdominis (DRA) is more common in pregnant and postpartum women. However, there is a paucity of knowledge about this condition among women. Menaka Radhakrishnan and Karthik Ramamurthy concluded in a scoping review on efficacy and challenges in the treatment of diastasis recti abdominis that recently minimally invasive surgery has been created to reduce IRD. However, it is not always applicable. Exercise treatment is recommended for women, even during pregnancy. Various research on exercise treatment for DRA patients have indicated considerable outcomes, even though the exercise program for DRA has to be thoroughly standardized [11].

According to Kaj Wedenberg et al. prospective 's randomized study on 60 pregnant women, which compared acupuncture with physiotherapy for the treatment of low-back and pelvic pain, acupuncture provided better pain relief and reduced disability as compared to physiotherapy [12]. Using an only one exercise and advice-based physical therapy intervention in early pregnancy, Moffatt, M. et al. conducted a pilot study on the prevention of

pregnancy-related lumbo-pelvic pain and noted that several protocol modifications would be necessary to ensure the satisfactory conclusion of a larger-scale study [13].

CONCLUSION

This presentation posed a challenge because the patient was an elderly gravida. The therapy was customized to accommodate both pregnancy-related adjustments and geriatric changes along with their accompanying complications. The results after treatment indicated a moderate improvement in the outcome measures. This letter has the potential to assist other therapists in devising more effective rehabilitation plans.

Sincerely yours,

Keywords: Elderly, Post-partum, rehabilitation, Advanced maternal age, IVF

Acknowledgment

The authors would like to acknowledge the contributors of the articles from which the supportive data was derived.

Financial support and sponsorship

There was no external financial support or funding obtained for this study.

Conflicts of interest

The authors declare no conflicts of interest.

Informed Consent

Consent was obtained from the patient.

Ethical Statement

This study does not require ethics committee approval.

Author Contribution

All authors contributed equally to the final manuscripts.

REFERENCES

- [1] Shen L (2022) Effects of Pelvic Floor Muscle Massage on the Pregnancy Outcome of Frozen Embryo Transfer in Patients with Thin Endometrium. *Comput Math Methods Med.* 2022:2803363. <https://doi.org/10.1155/2022/2803363>

- [2] Mehari M, Maeruf H, Robles CC, et al. (2020) Advanced maternal age pregnancy and its adverse obstetrical and perinatal outcomes in Ayder comprehensive specialized hospital, Northern Ethiopia, 2017: a comparative cross-sectional study. *BMC Pregnancy Childbirth*. 20(1):60. <https://doi.org/10.1186/s12884-020-2740-6>
- [3] Yan J, Wu K, Tang R, Ding L, Chen Z-J (2012) Effect of maternal age on the outcomes of in vitro fertilization and embryo transfer (IVF-ET). *Sci China Life Sci.*, 55(8):694-8. <https://doi.org/10.1007/s11427-012-4357-0>
- [4] Magistrado L, Tolcher MC, Suhag A, Zambare S, Aagaard KM (2020) Pregnancy and Lactation in a 67-Year-Old Elderly Gravida following Donor Oocyte In Vitro Fertilization. *Case Rep Obstet Gynecol*. 2020:9801565. <https://doi.org/10.1155/2020/9801565>
- [5] Lampinen R, Vehviläinen-Julkunen K, Kankkunen P (2009) A Review of Pregnancy in Women Over 35 Years of Age. *Open Nurs J*. 3:33–38. <https://doi.org/10.2174/1874434600903010033>
- [6] Wane M, Naqvi WM, Vaidya L, Kumar K: Kinesiophobia in a Patient With Postoperative Midshaft Fracture: A Case Report of Its Impact on Rehabilitation in a 16-Year-Old Girl. *Cureus*. 12. <https://doi.org/10.7759/cureus.11333>
- [7] Montoya Arizabaleta AV, Orozco Buitrago L, Aguilar de Plata AC, Mosquera Escudero M, Ramírez-Vélez R (2010) Aerobic exercise during pregnancy improves health-related quality of life: a randomised trial. *J Physiother.*, 56:253–8. [https://doi.org/10.1016/S1836-9553\(10\)70008-4](https://doi.org/10.1016/S1836-9553(10)70008-4)
- [8] Britnell SJ, Cole JV, Isherwood L, et al. (2005) Postural Health in Women: The Role of Physiotherapy. *J Obstet Gynaecol Can*. 27:493–500. [https://doi.org/10.1016/S1701-2163\(16\)30535-7](https://doi.org/10.1016/S1701-2163(16)30535-7)
- [9] Bais A, Bawiskar D, Naqvi WM, Sahu A (2020) A case study on the impact of physiotherapy on unilateral foot drop after lumbar fusion and discectomy. *Medical Science*. 24(103):1773-1779.
- [10] Ain QU, Waqar F, Bashir A (2018) Ease in Pain and Functional Activities following Caesarean Delivery by Post Natal Exercises (Pilot Study). *J Islam Int Med Coll JIIMC.*, 13:32–5.
- [11] Radhakrishnan M, Ramamurthy K (2022) Efficacy and Challenges in the Treatment of Diastasis Recti Abdominis—A Scoping Review on the Current Trends and Future Perspectives. *Diagnostics*. 12:2044. <https://doi.org/10.3390/diagnostics12092044>
- [12] Wedenberg K, Moen B, Norling Å (2000) A prospective randomized study comparing acupuncture with physiotherapy for low-back and pelvic pain in pregnancy. *Acta Obstet Gynecol Scand*. 79:331–5. <https://doi.org/10.1034/j.1600-0412.2000.079005331.x>
- [13] Moffatt M, Flynn M (2014) Prevention of pregnancy-related lumbopelvic pain, using a single exercise and advice-based physiotherapy intervention in early pregnancy: A pilot study. *Physiother Pract Res*. 35:41–8. <https://doi.org/10.3233/PPR-130028>

How to Cite;

Gulrandhe P, Telang P, Jaiswal S (2023) Optimising Rehabilitation Strategies for Postpartum Elderly Gravida with In Vitro Fertilisation Conception. *Eur J Ther*. 29(4):977-981. <https://doi.org/10.58600/eurjther1955>