

Novel Approaches with Stem Cell Therapy for Endometrial Rejuvenation in Intrauterine Adhesion

Prof. Jesmine Banu.

Background

Patients with intrauterine adhesions and damaged endometrium present a major challenge in infertility treatment. Adhesions can partially or completely obliterate the uterine cavity and/or cervical canal. In severe cases, the loss of endometrial stem cells impairs regeneration. No effective methods available to restore the endometrium after severe injury, but recent advancement stem cell therapy for endometrial rejuvenation is a novel approaches.

Objective

To identify the effect of stem cell therapy for endometrial rejuvenation in women with intrauterine adhesion.

Materials and Methods

Quasi-Experimental study, Department of REI, BMU

50 infertile women (Age 20–40) with intrauterine adhesions after fulfilling inclusion and exclusion criteria

Enrolled participants were divided into two groups
Purposive Sampling (Non randomly selected)

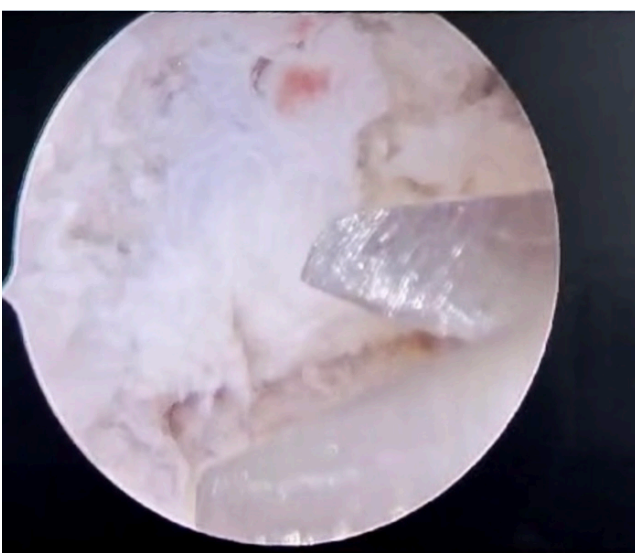
Group 1: Stem Cell Therapy Group

Hyssteroscopic adhesiolysis with instillation of stem cell (4 ml) to the sub-endometrium followed by standard hormone treatment for 3 months.

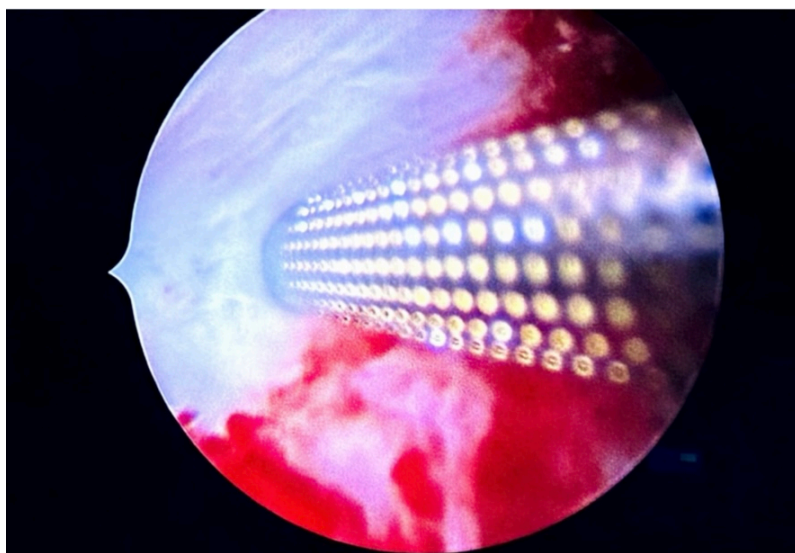
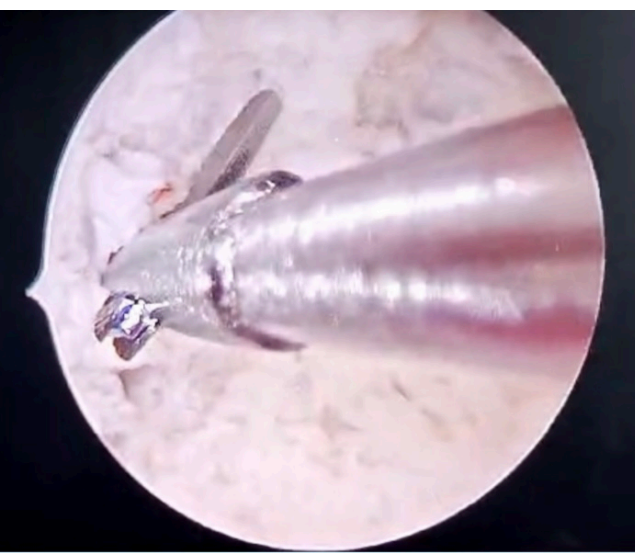
Group 2: Control Group

Conventional hysteroscopic adhesiolysis along with intrauterine catheter followed by standard hormone treatment for 3 months.

Both the groups were followed-up subsequently for 3 months.



Hysteroscopic
adhesiolysis

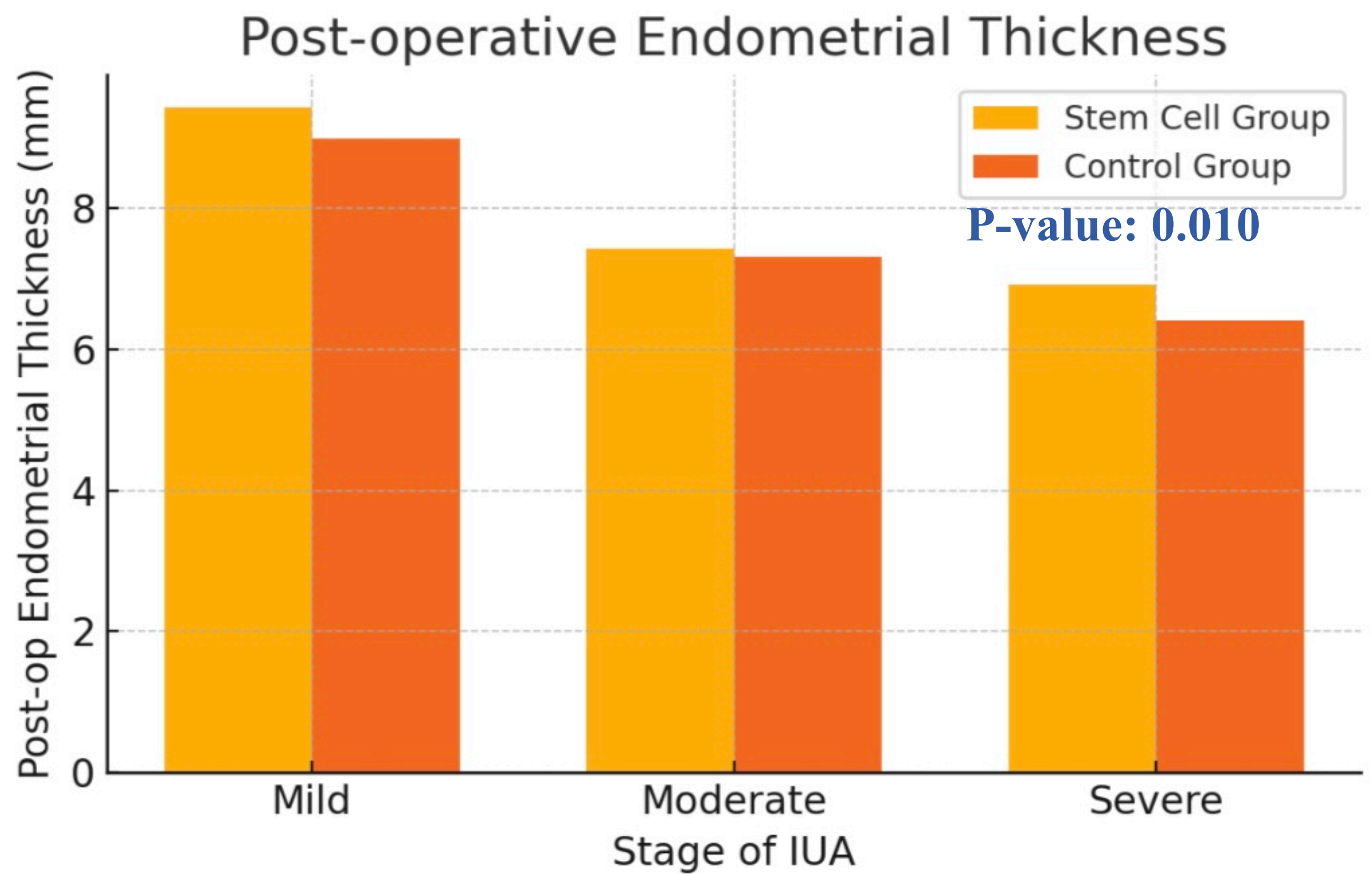
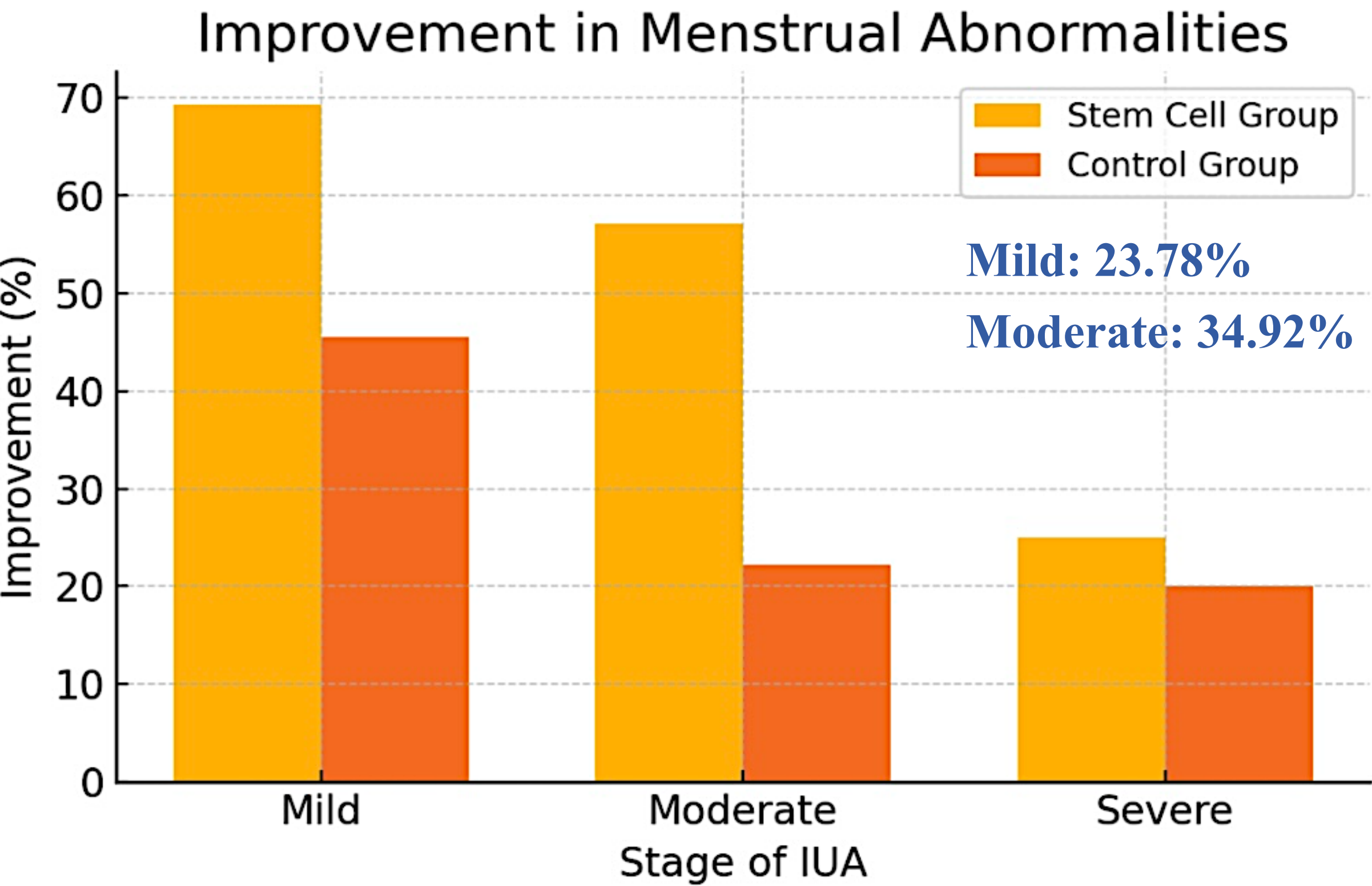


Endometrial Stem Cells
Therapy

Results

Baseline Assessment of IUA

	Group 1	Group 2
Mild	56%	44%
Moderate	28%	36%
Severe	16%	20%



3 patients (12%)
conceived
in Group 1



Discussion

Name	Year	Outcome
Yiming Zhao et al ⁸	2020	So, Stem cell and hormone combination therapy was safe and more effective in improving menstruation duration, pregnancy outcome, and endometrial thickness.
Ariel Benor et al ⁹	2020	Safety and effective in resumption of menstruation, fertility outcomes, and endometrial regeneration.
Xavier Santamaria et al ¹⁰	2016	Endometrial thickness increased from an average of 4.3 mm to 6.7 mm. Three patients became pregnant spontaneously.

Conclusion

Stem cells therapy improved endometrial thickness, enhanced menstrual flow, and increased chance of conception in women with intrauterine adhesion.

References

- 1.Hatasaka H. Clinical Management of the Uterine Factor in Infertility. Clin Obstet Gynecol. 2011;54(4):696-709. doi:10.1097/GRF.0b013e3182353d68.
- 2.Schenker JG, Margalioth EJ. Intrauterine adhesions: an updated appraisal. Fertil Steril. 1982;37(5):593-610. doi:10.1016/S0015-0282(16)46268-0.
- 3.March CM. Asherman's Syndrome. Semin Reprod Med. 2011;29(2):83-94. doi:10.1016/j.rbmo.2010.11.018.
- 4.The Practice Committee of the American Society for Reproductive Medicine. Current evaluation of amenorrhea. Fertil Steril. 2006;86(4):1481-55. doi:10.1016/j.fertnstert.2004.02.098.
- 5.Panayiotidis C, Weyers S, Bosteels J, Van Herendael B. Intrauterine adhesions (IUA): Has there been progress in understanding and treatment over the last 20 years? Gynecol Surg. 2009;6(3):197-211.
6. Buttram Jr VC Siegler A, DeCherney A, Gibbons W, March C. G V, American Fertility Society. The American Fertility Society classifications of adnexal adhesions, distal tubal occlusion, tubal occlusion secondary to tubal ligation, tubal pregnancies, mullerian anomalies and intrauterine adhesions. Fertil Steril. 1988;49(6):944-955.doi:10.1016/S0015-0282(16)59942-
7. Manchanda, R., Rathore, A., Carugno, J., Della Corte, L., Tesarik, J., Török, P., ... Vitale, S. G. (2021). Classification systems of Asherman's syndrome. An old problem with new directions. *Minimally Invasive Therapy & Allied Technologies*, 30(5), 304–310. <https://doi.org/10.1080/13645706.2021.1893190>
8. Zhao Y, Luo Q, Zhang X, Qin Y, Hao J, Kong D, Wang H, Li G, Gu X, Wang H. Clinical Efficacy and Safety of Stem Cell-Based Therapy in Treating Asherman Syndrome: A System Review and Meta-Analysis. Stem Cells Int. 2020 Dec 19;2020:8820538. doi: 10.1155/2020/8820538. PMID: 33414830; PMCID: PMC7769648.
9. Benor A, Gay S, DeCherney A. An update on stem cell therapy for Asherman syndrome. J Assist Reprod Genet. 2020 Jul;37(7):1511-1529. doi: 10.1007/s10815-020-01801-x. Epub 2020 May 22. PMID: 32445154; PMCID: PMC7376809
10. Santamaria X, Cabanillas S, Cervelló I, Arbona C, Raga F, Ferro J, Palmero J, Remohí J, Pellicer A, Simón C. Autologous cell therapy with CD133+ bone marrow-derived stem cells for refractory Asherman's syndrome and endometrial atrophy: a pilot cohort study. Hum Reprod. 2016 May;31(5):1087-96. doi: 10.1093/humrep/dew042. Epub 2016 Mar 22. PMID: 27005892.