

## İnfertilite Tedavilerinde Akupunktur Kullanımı

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## GİRİŞ

Üreme çağındaki çiftlerin tahminen %8 ila 12'si dünya çapında infertiliteden muzdariptir (1) ve kadın infertilite insidans oranı %15 olarak rapor edilmiştir (2), bu da onu kanser ve kardiyovasküler hastalıklardan sonra üçüncü hastalık yapmaktadır.

Ayrıca kadın infertilitesi kadının psikolojisini olumsuz etkilemekte ve aile içi uyumun bozulmasına neden olmaktadır. Kadın infertilitesi insidansının her yıl artmasıyla birlikte acil çözülmesi gereken sorunlardan biri haline gelmiş ve araştırmacıların yaygın endişesini uyandırmıştır. İnfertilite, 12 aylık düzenli korunmasız cinsel ilişkiden sonra klinik gebelik oluşmaması durumudur (3). Yapay kontrasepsiyon dışında birçok faktör, davranış ve patoloji gebelik sürecini engelleyebilir ve infertiliteye yol açabilir (4). Ayrıca, artan yaş da fertiliteye olumsuz katkıda bulunan önemli faktörlerden biri olarak kabul edilmiştir (5). Genç kadınlar arasında kadın infertilitesi insidansının oranı son yıllarda artmıştır (6). Sağlıksız yaşam tarzları ve çevresel faktörler nedeniyle, kadın infertilitesinde prematür yumurtalık yetmezliği

(POI), polikistik over sendromu (PKOS), kronik endometrit (CE) ve endometriyal polipler gibi üreme ve endokrin hastalıklarının insidansı giderek artmaktadır (7). Hepsi farklı mekanizmalarla gebeliğin oluşmasını engeller ve olumsuz gebelik sonuçlarına yol açar. Son zamanlarda kadın infertilite vakalarındaki artış, artifisyel inseminasyon (AI), tüp bebek-embriyo transferi (IVF-ET) ve intrasitoplazmik sperm enjeksiyonu (ICSI) gibi yardımcı üreme teknolojilerinin geliştirilmesini ve uygulanmasını da teşvik etmiştir. Bununla birlikte, AI ve ET teknolojisinin mevcut başarı oranının sırasıyla %15 (8, 9) ve %30 ila 40 (10) olduğu bildirilmektedir. Bu nedenle, yardımcı üreme teknolojisinin başarı oranını daha da arttırmak, güncel araştırmaların da odak noktasıdır. Tamamlayıcı ve alternatif tıp (TAT) ve yardımcı üreme teknolojisinin birlikte uygulanması, klinik gebelik oranını iyileştirmek için bir çözüm olabilir.

Akupunktur binlerce yıldır var olan ve klinik pratikte yaygın olarak kullanılan alternatif bir yardımcı tedavi yöntemidir. Akupunkturun terapötik etkisini destekleyen pek çok araştırma kanıtı vardır (11). Geleneksel akupunktur, belirli

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olmak üzere klinik heterojenliğe bağlı olduğunu düşünüyoruz. Akupunkturun uygulanması kolay olmasına rağmen, etkinliği açığı, derinlik, tek seferlik süre, optimal akupunktur süresi, akupunkturun tedavi süreci, farklı akupunktur noktalarında farklı akupunktur manipülasyonları ve hastaların bireysel yanıtlarındaki farklılıklar tarafından belirlenir. Bu kontrol değişkenlerindeki farklılıklar, klinik çalışmalar arasında heterojenliğe yol açar ve tutarsız araştırma sonuçlarının ana nedenidir, ancak akupunkturun etkinliği göz ardı edilemez.

## KAYNAKLAR

1. W. Ombelet, I. Cooke, S. Dyer, G. Serour, and P. Devroey, "Infertility and the provision of infertility medical services in developing countries," *Human Reproduction Update*, vol. 14, no. 6, pp. 605–621, 2008. View at: [Publisher Site](#) | [Google Scholar](#)
2. J. Datta, M. J. Palmer, C. Tanton et al., "Prevalence of infertility and help seeking among 15000 women and men," *Human Reproduction*, vol. 31, no. 9, pp. 2108–2118, 2016. View at: [Publisher Site](#) | [Google Scholar](#)
3. F. Zegers-Hochschild, G. D. Adamson, S. Dyer et al., "The international glossary on infertility and fertility care, 2017," *Fertility and Sterility*, vol. 108, no. 3, pp. 393–406, 2017. View at: [Publisher Site](#) | [Google Scholar](#)
4. M. Vander Borgh and C. Wyns, "Fertility and infertility: definition and epidemiology," *Clinical Biochemistry*, vol. 62, pp. 2–10, 2018. View at: [Publisher Site](#) | [Google Scholar](#)
5. R. J. Hart, "Physiological aspects of female fertility: role of the environment, modern lifestyle, and genetics," *Physiological Reviews*, vol. 96, no. 3, pp. 873–909, 2016. View at: [Publisher Site](#) | [Google Scholar](#)
6. M. D. Pisarska, "Fertility status and overall health," *Seminars in Reproductive Medicine*, vol. 35, no. 03, pp. 203–204, 2017. View at: [Publisher Site](#) | [Google Scholar](#)
7. Z. J. Chen, J. Y. Liu, H. F. Huang et al., "Guideline on diagnosis of infertility," *Zhonghua Fu Chan Ke Za Zhi*, vol. 54, no. 8, pp. 505–511, 2019. View at: [Google Scholar](#)
8. B. Cohlen, A. Bijkerk, S. Van der Poel, and W. Ombelet, "IUI: review and systematic assessment of the evidence that supports global recommendations," *Human Reproduction Update*, vol. 24, no. 3, pp. 300–319, 2018. View at: [Publisher Site](#) | [Google Scholar](#)
9. M. Mikołajczyk, T. Goździewicz, and J. Skrzypczak, "The efficiency of artificial insemination by husband sperm in infertile couples according to the revised WHO 2010 criteria," *Ginekologia Polska*, vol. 84, no. 10, pp. 846–850, 2013. View at: [Publisher Site](#) | [Google Scholar](#)
10. European IVF-monitoring Consortium (EIM), European Society of Human Reproduction and Embryology (ESHRE), C. Calhaz-Jorge et al., "Assisted reproductive technology in Europe, 2013: results generated from European registers by ESHRE," *Human Reproduction*, vol. 32, no. 10, pp. 1957–1973, 2017. View at: [Google Scholar](#)
11. T. Y. Chon and M. C. Lee, "Acupuncture," *Mayo Clinic Proceedings*, vol. 88, no. 10, pp. 1141–1146, 2013. View at: [Publisher Site](#) | [Google Scholar](#)
12. Y. C. Cheong, S. Dix, Y. N. E. Hung, W. L. Ledger, and C. Farquhar, "Acupuncture and assisted reproductive technology," *The Cochrane database of systematic reviews*, vol. 7, Article ID CD006920, 2013. View at: [Google Scholar](#)
13. J. R. He, S. G. Yu, Y. Tang, and P. Illes, "Purinergetic signaling as a basis of acupuncture-induced analgesia," *Purinergetic Signalling*, vol. 16, no. 3, pp. 297–304, 2020. View at: [Publisher Site](#) | [Google Scholar](#)
14. Y. Zhuang, J. J. Xing, J. Li, B. Y. Zeng, and F. Liang, "History of acupuncture research," *International Review of Neurobiology*, vol. 111, pp. 1–23, 2013. View at: [Publisher Site](#) | [Google Scholar](#)
15. N. J. Hu, C. Lin, J. Li et al., "Remarks on the relationship between deqi and effect of acupuncture," *Zhongguo Zhen Jiu*, vol. 34, no. 4, pp. 413–416, 2014. View at: [Google Scholar](#)
16. M. P. Kaufman, T. G. Waldrop, K. J. Rybicki, G. A. Ordway, and J. H. Mitchell, "Effects of static and rhythmic twitch contractions on the discharge of group III and IV muscle afferents," *Cardiovascular Research*, vol. 18, no. 11, pp. 663–668, 1984. View at: [Publisher Site](#) | [Google Scholar](#)
17. W. Zhou and P. Benharash, "Effects and mechanisms of acupuncture based on the principle of meridians," *Journal of acupuncture and meridian studies*, vol. 7, no. 4, pp. 190–193, 2014. View at: [Publisher Site](#) | [Google Scholar](#)
18. H. Lee, J. Y. Lee, Y. J. Kim et al., "Acupuncture for symptom management of rheumatoid arthritis: a pilot study," *Clinical Rheumatology*, vol. 27, no. 5, pp. 641–645, 2008. View at: [Publisher Site](#) | [Google Scholar](#)
19. E. K. Tan, G. W. M. Millington, and N. J. Levell, "Acupuncture in dermatology: an historical perspective," *International Journal of Dermatology*, vol. 48, no. 6, pp. 648–652, 2009. View at: [Publisher Site](#) | [Google Scholar](#)
20. J. J. Zhao, P. J. Rong, L. Shi, H. Ben, and B. Zhu, "Somato stimulation and acupuncture therapy," *Chinese Journal of Integrative Medicine*, vol. 22, no. 5, pp. 394–400, 2016. View at: [Publisher Site](#) | [Google Scholar](#)
21. S. Andersson and T. Lundberg, "Acupuncture — from empiricism to science: functional background to acupuncture effects in pain and disease Pain and disease," *Medical Hypotheses*, vol. 45, no. 3, pp. 271–281, 1995. View at: [Publisher Site](#) | [Google Scholar](#)
22. C. Rivier and S. Rivest, "Effect of stress on the activity of the hypothalamic-pituitary-gonadal Axis: peripheral and central Mechanisms1," *Biology of Reproduction*,

- vol. 45, no. 4, pp. 523–532, 1991. View at: [Publisher Site](#) | [Google Scholar](#)
23. B. Y. Chen and J. Yu, “Relationship between blood radio-immunoreactive beta-endorphin and hand skin temperature during the electro-acupuncture induction of ovulation,” *Acupuncture & Electro-Therapeutics Research*, vol. 16, no. 1, pp. 1–5, 1991. View at: [Publisher Site](#) | [Google Scholar](#)
  24. E. S. Victorin, T. Lundeberg, U. Waldenström et al., “Effects of electro-acupuncture on nerve growth factor in rats with experimentally induced polycystic ovaries,” *Biology of Reproduction*, vol. 63, pp. 1507–1513, 2000. View at: [Google Scholar](#)
  25. E. Stener-Victorin, U. Waldenström, S. A. Andersson, and M. Wikland, “Reduction of blood flow impedance in the uterine arteries of infertile women with electro-acupuncture,” *Human Reproduction*, vol. 11, no. 6, pp. 1314–1317, 1996. View at: [Publisher Site](#) | [Google Scholar](#)
  26. S. K. Kim and H. Bae, “Acupuncture and immune modulation,” *Autonomic Neuroscience*, vol. 157, no. 1-2, pp. 38–41, 2010. View at: [Publisher Site](#) | [Google Scholar](#)
  27. Z. R. Li, M. H. Shen, and Y. J. Peng, “Progress in researches on the effect of acupuncture in antagonizing oxygen stress,” *Chinese Journal of Integrative Medicine*, vol. 11, no. 2, pp. 156–160, 2005. View at: [Publisher Site](#) | [Google Scholar](#)
  28. J. Huo, J. Zhao, Y. Yuan, and J. Wang, “Research status of the effect mechanism on catgut-point embedding therapy,” *Zhongguo Zhen Jiu*, vol. 37, no. 11, pp. 1251–1254, 2017. View at: [Publisher Site](#) | [Google Scholar](#)
  29. J. Wu, Q. Fu, S. Yang, H. Wang, and Y. Li, “Efficacy and safety of acupoint catgut embedding for diarrhea-predominant irritable bowel syndrome and constipation-predominant irritable bowel syndrome: a systematic review and meta-analysis,” *Evidence-based Complementary and Alternative Medicine: eCAM*, vol. 2020, Article ID 5812320, 2020. View at: [Google Scholar](#)
  30. W. Qin, K. Zhao, and H. Yang, “Effect of acupoint catgut embedding therapy combined with Chinese medicine for nourishing the kidneys and promoting blood circulation and improving blood glucose and lipid levels as well as the pregnancy rate in obese PCOS patients with infertility,” *Experimental and Therapeutic Medicine*, vol. 12, no. 5, pp. 2909–2914, 2016. View at: [Publisher Site](#) | [Google Scholar](#)
  31. M. C. Inhorn and P. Patrizio, “Infertility around the globe: new thinking on gender, reproductive technologies and global movements in the 21st century,” *Human Reproduction Update*, vol. 21, no. 4, pp. 411–426, 2015. View at: [Publisher Site](#) | [Google Scholar](#)
  32. J. X. Wang, Y. Yang, Y. Song, and L. X. Ma, “Positive effect of acupuncture and cupping in infertility treatment,” *Medical Acupuncture*, vol. 30, no. 2, pp. 96–99, 2018. View at: [Publisher Site](#) | [Google Scholar](#)
  33. D. I. M. di Villahermosa, L. G. dos Santos, M. B. Nogueira, F. L. Vilarino, and C. P. Barbosa, “Influence of acupuncture on the outcomes of in vitro fertilisation when embryo implantation has failed: a prospective randomised controlled clinical trial,” *Acupuncture in Medicine*, vol. 31, no. 2, pp. 157–161, 2013. View at: [Publisher Site](#) | [Google Scholar](#)
  34. X. Wang, F. Jing, C. Wang et al., “The influence for success rate of warm acupuncture for tube baby of infertility patients with kidney yang deficiency: a randomized controlled trial,” *Zhongguo Zhen Jiu*, vol. 36, no. 9, pp. 906–910, 2016. View at: [Publisher Site](#) | [Google Scholar](#)
  35. L. Zhou, Y. Xia, X. Ma et al., “Effects of menstrual cycle-based acupuncture therapy on IVF-ET in patients with decline in ovarian reserve,” *Zhongguo Zhen Jiu*, vol. 36, no. 1, pp. 25–28, 2016. View at: [Google Scholar](#)
  36. A. Z. Altutunji, L. Liu, J. Cai, Z. Wang, and Y. Gao, “The effect of acupuncture on anti-mullerian hormone and assisted reproduction outcome in Polycystic Ovary Syndrome patients undergoing in vitro fertilization,” *JPMA. The Journal of the Pakistan Medical Association*, vol. 69(Suppl 3), no. 8, pp. S4–S8, 2019. View at: [Google Scholar](#)
  37. A. S. Dehghani, K. Homayouni, Z. Kanannejad, and Z. Kanannejad, “The effect of acupuncture on the day of embryo transfer on the in vitro fertilization outcomes: an RCT,” *International journal of reproductive biomedicine*, vol. 18, no. 3, pp. 209–214, 2020. View at: [Publisher Site](#) | [Google Scholar](#)
  38. P. G. Guven, Y. Cayir, and B. Borekci, “Effectiveness of acupuncture on pregnancy success rates for women undergoing in vitro fertilization: a randomized controlled trial,” *Taiwanese Journal of Obstetrics & Gynecology*, vol. 59, no. 2, pp. 282–286, 2020. View at: [Publisher Site](#) | [Google Scholar](#)
  39. D. Andersen, K. Løssl, A. Nyboe Andersen et al., “Acupuncture on the day of embryo transfer: a randomized controlled trial of 635 patients,” *Reproductive BioMedicine Online*, vol. 21, no. 3, pp. 366–372, 2010. View at: [Publisher Site](#) | [Google Scholar](#)
  40. I. Moy, M. P. Milad, R. Barnes, E. Confino, R. R. Kazer, and X. Zhang, “Randomized controlled trial: effects of acupuncture on pregnancy rates in women undergoing in vitro fertilization,” *Fertility and Sterility*, vol. 95, no. 2, pp. 583–587, 2011. View at: [Publisher Site](#) | [Google Scholar](#)
  41. B. H. Rashidi, E. S. Tehrani, N. A. Hamedani, and L. Pirzadeh, “Effects of acupuncture on the outcome of in vitro fertilisation and intracytoplasmic sperm injection in women with polycystic ovarian syndrome,” *Acupuncture in Medicine*, vol. 31, no. 2, pp. 151–156, 2013. View at: [Publisher Site](#) | [Google Scholar](#)
  42. Q. Chen and C. Hau, “Impacts on pregnancy outcome treated with acupuncture and moxibustion in IVF-ET patients,” *Zhongguo Zhen Jiu*, vol. 35, no. 4, pp. 313–317, 2015. View at: [Google Scholar](#)
  43. A. C. Kusuma, N. Oktari, H. Mihardja et al., “Electro-acupuncture enhances number of mature oocytes and fertility rates for in vitro fertilization,” *Medical Acupuncture*, vol. 31, no. 5, pp. 289–297, 2019. View at: [Publisher Site](#) | [Google Scholar](#)

44. H. C. Wu, J. W. Zhang, Z. G. Sun, S. Xiang, Y. Qiao, and F. Lian, "Effects of electroacupuncture on expression of PI3K/Akt/Foxo3a in granulosa cells from women with shen (kidney) deficiency syndrome undergoing in vitro fertilization-embryo transfer," *Chinese Journal of Integrative Medicine*, vol. 25, no. 4, pp. 252–258, 2019. View at: [Publisher Site](#) | [Google Scholar](#)
45. S. Xiang, M. F. Xia, J. Y. Song, D. Liu, and F. Lian, "Effect of electro-acupuncture on expression of IRS-1/PI3K/GLUT4 pathway in ovarian granulosa cells of infertile patients with polycystic ovary syndrome-insulin resistance of phlegm-dampness syndrome," *Chinese Journal of Integrative Medicine*, vol. 27, no. 5, pp. 330–335, 2021. View at: [Publisher Site](#) | [Google Scholar](#)
46. F. Qu, F. F. Wang, Y. Wu et al., "Transcutaneous electrical acupoint stimulation improves the outcomes of in vitro fertilization: a prospective, randomized and controlled study," *Explore*, vol. 13, no. 5, pp. 306–312, 2017. View at: [Publisher Site](#) | [Google Scholar](#)
47. Z. J. Zhai, J. E. Liu, L. L. Lei, and S. Wang, "Effects of transcutaneous electrical acupoint stimulation on ovarian responses and pregnancy outcomes in patients undergoing IVF-et: a randomized controlled trial," *Chinese Journal of Integrative Medicine*, vol. 28, no. 5, pp. 434–439, 2021. View at: [Publisher Site](#) | [Google Scholar](#)
48. Z. Shuai, X. Li, X. Tang, F. Lian, and Z. Sun, "Transcutaneous electrical acupuncture point stimulation improves pregnancy outcomes in patients with recurrent implantation failure undergoing in vitro fertilisation and embryo transfer: a prospective, randomised trial," *Acupuncture in Medicine*, vol. 37, no. 1, pp. 33–39, 2019. View at: [Publisher Site](#) | [Google Scholar](#)
49. D. Jiang, Y. Zhang, X. Wu, and S. Wu, "Infertility in polycystic ovary syndrome treated with acupuncture and clomiphene: a randomized controlled trial," *Zhongguo Zhen Jiu*, vol. 35, no. 2, pp. 114–118, 2015. View at: [Google Scholar](#)
50. X. K. Wu, E. Stener-Victorin, H. Y. Kuang et al., "Effect of acupuncture and clomiphene in Chinese women with polycystic ovary syndrome: a randomized clinical trial," *JAMA*, vol. 317, no. 24, p. 2502, 2017. View at: [Publisher Site](#) | [Google Scholar](#)
51. J. Xu, X. Hong, J. Zeng, X. Wang, and J. Chen, "Efficacy of acupuncture as adjunctive treatment on infertility patients with polycystic ovary syndrome," *Zhongguo Zhen Jiu*, vol. 38, no. 4, p. 358, 2018. View at: [Publisher Site](#) | [Google Scholar](#)
52. L. Yu, L. Cao, J. Xie, and Y. Shi, "Therapeutic effects on ovulation and reproduction promotion with acupuncture and clomiphene in polycystic ovary syndrome," *Zhongguo Zhen Jiu*, vol. 38, no. 3, pp. 263–268, 2018. View at: [Publisher Site](#) | [Google Scholar](#)