



KEY WORDS

- ✓ POI
- ✓ VCD
- ✓ Mechanic stimulation
- ✓ PRP
- ✓ COH
- ✓ Hippo signaling pathway

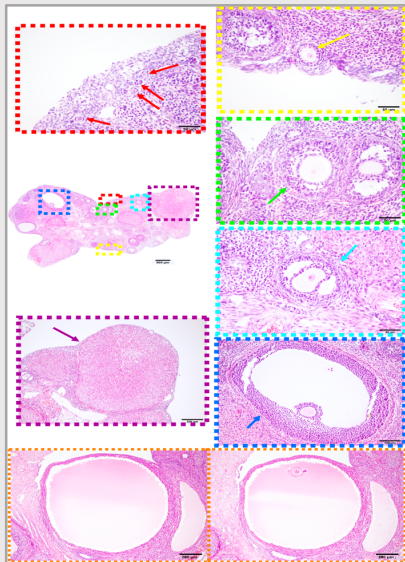
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THE EFFECT OF OVARIAN MECHANICAL STIMULATION ON FOLLICULAR ACTIVATION IN THE RAT IN VIVO MODEL OF PREMATURE OVARIAN INSUFFICIENCY; COMPARATIVE ANALYSIS OF INTRAOVARIAN NEEDLE AND PLATELET-RICH PLASMA (PRP) INJECTION

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THESIS ABSTRACT

The aim of the thesis study is to comparatively evaluate the effect and mechanism of intraovarian mechanical stimulation and intraovarian PRP injection before the controlled ovarian hyperstimulation (COH) protocol on the development of ovarian follicles through the hippo signaling pathway in cases of premature ovarian insufficiency (POI), which is one of the causes of infertility.

As a result of VCD injections, a decrease in the number of primordial follicles and primary follicles from ovarian follicles, an increase in the number of atretic follicles, a decrease in AMH concentration, and statistically significant differences in the expression of hippo signaling pathway proteins were observed in the experimental groups.

In this study, intraovarian PRP injection applied before the COH protocol in the rat experimental POI model had a similar effect to physiological saline injection in disrupting the hippo signaling pathway. The similarity of the effects of mechanical stimulation and PRP injection into the tissue on the activation of primordial follicles and the incompatibility between the Hippo signaling pathway proteins and follicle activation levels showed the need to investigate different mechanisms in the follicle increase due to mechanical stimulation.

APPLICATION AREAS OF THE THESIS RESULTS

It was thought that the application of platelet-rich plasma (PRP) injection in cases of premature ovarian insufficiency (POI) could be a guide in assisted reproductive treatments, especially in the fields of reproductive biology and clinical embryology, to investigate its role in follicle development and oocyte maturation processes.

ACADEMIC ACTIVITIES

ARTICLES

1. Çakır, C., Kuşpınar, G., Kurt, G., Berber, M., Aslan, K., Kasapoglu, I., Uncu, G., & Avcı, B. (2023). Comparison of semen parameters in the same patients before and after diagnosis of COVID-19. *Journal of Medical Virology*, 95(9):e29094. <https://doi.org/10.1002/jmv.29094>

DECLARATIONS

1. Işıklar, S., Çakır, C., Ganiyev, A., Kurt, G., Pomak, B., & Avcı, B. (2021, Kasım 11-14). SARS-COV-2 Enfeksiyonunun Semen Parametreleri Üzerine Etkisi. TSRM2021 - Ulusal Üreme Sağlığı ve Infertilite Kongresi, Belek/Antalya, Türkiye

2. Kuşpınar, G., Kurt, G., Çakır, C. (2023, Mart 5-8). Sıçan *In Vivo* Prematür Ovarian Yetmezliği Modelinde İntraovaryan Plateletten Zengin Plazma Uygulamasının Ovarian Folliküllerin Gelişimine Etkisi. 17. Uludağ Jinekoloji ve Obstetrik Kış Kongresi, Bursa, Türkiye.

PROJECTS

1. Avcı, B. (Yürütücü), Kurt, G. Sıçan *In Vivo* Prematür Ovarian Yetmezliği Modelinde Ovarian Mekanik Uyarılmanın Folliküler Aktivasyona Etkisi; İntraovaryan İğne ve Plateletten Zengin Plazma (PRP) Enjeksiyonunun Karşılaştırmalı Analizi (TYL-2023-1534). Yükseköğretim Kurumları Destekli Proje, 2023.