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Oral Presentations

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The effect of autologous platelet-rich plasma on in vitro maturation of immature human oocytes

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Background: Elements in the culture medium can have an increasing effect on the growth and development of follicles and oocytes in the laboratory. In this study, the effect of autologous platelet enriched plasma on the maturation of immature human oocytes in vitro was investigated.

Objective: Blood contains many platelets that can be used enriched. Platelet-rich plasma (PRP) has been used for more than a decade now in a variety of fields, such as surgical wound healing or unhealed fractures. The use of autologous PRP has the advantage that it does not cause allergic reactions in the patient and can be easily used.

Materials and Methods: The follicles were cultured

in culture medium for 12 days and the medium contained 5 and 10% of platelet extract. The culture medium was changed every other day and finally, the percentage of survival and growth of oocytes was examined under a microscope at the end of culture. After 12 days of culture, oocytes showed significant growth in environments containing platelet extract and were able to reach the size of mature oocytes in the control environment, but at the end of 12 days of culture, the highest survival belonged to the experimental medium containing 5% platelet and the number of oocytes in other groups showed a significant decrease compared to this experimental group.

Results: As a result of this study, it was shown that PRP improves the culture medium of immature oocytes and is effective in its growth and survival rate.

Conclusion: At the end of the culture, the best survival was related to 5% platelet-rich plasma, but using different doses of PRP and other tests with more immature oocytes are recommended. It seems that platelet can be used as a supplement or a suitable alternative to regular serums.

Key words: Immature oocytes, In vitro maturation, Platelet-rich Plasma.