

Endometrial thickness in ovariectomised rats exposed to recombinant follicle stimulating hormone (gonal-F) with and without HCG, a histological study

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Objective: To evaluate the effects of recombinant follicle stimulating hormone (Gonal-F) when used alone or in combination with Human Chorionic Gonadotropin (hCG) on endometrial thickness (ET) during implantation in ovariectomised rats.

Methods: Animals randomly divided into three groups: Experimental, sham and control. Experimental groups divided into seven sub-groups (each, n=5): 1-Gonal-F 10 [IU] (**G 10**), 2-Gonal-F 20 [IU] (**G 20**), 3-Gonal-F 30 [IU] (**G 30**), 4-hCG (**H**), 5-**G10+H**, 6-**G20+H** and 7-**G30+H**. To remove the effects of steroids ovarian hormones, the samples were put under the bilateral ovariectomy. Next step rats for 4 weeks without intervention during the recovery time. Experimental subgroups received a single dose of Gonal-F (daily, 5 days) and hCG (after the last injection of Gonal-F) by intraperitoneal injection alone or in combination. Sham group received 10 units of normal saline. Periodic acid schiff staining was performed on endometrial sections of paraffin-embedded tissues to study the endometrial thickness (ET) in ovariectomised rats by light microscopy.

Results: Experimental subgroups which received Gonal-F with and without hCG presented a significantly lower ET ($p < 0.05$), when compared with sham and control groups. ET was significantly thinner in G10 subgroups taking Gonal-F [53.37 ± 5.37 ($p < 0.05$)] and G30+H subgroups taking Gonal-F+HCG [57.51 ± 5.67 ($p < 0.05$)]. Administration of hCG following stimulation with Gonal-F in subgroups of experimental, could not able to return thickness to normal rate.

Conclusion: Administration of Gonal-F 20 [IU] alone or in combination with hCG may be better resulted than other dosage and usage of hCG could not able to return thickness to normal rate.

Keywords: Ovarian stimulation, Gonal-F, hCG, endometrial thickness.