**Background:** Estrogen and progesterone are ovarian hormones that can be used as oral contraceptive pills (in combined formula) in addition to their use as hormonal replacement therapy in menopause.

**Methods:** A sample of 30 animals having an estrous cycle of 4 days period was used. The animals were divided into 2 main groups; a control group (6 rats) and treated group which further divided into 3 subgroups; T I, T II and T III (8 rats for each) according to the dose of Estradiol which was given in three different dosages (1, 4 and 10 µg/day) for a period of two successive estrous cycles (i.e. 8 days). The Progesterone hormone was given in a dose of 4 mg/kg body weight, for all the 3 subgroups, on the third and fourth days of the two successive estrous cycles. Immunohistochemical study was done through the application of Vimentin and Desmin markers. Staining procedure: (using Labelled Strept-Avidin Biotin LSAB™+/HRP kit, code number K0697 detection system). Aperio Positive Pixel Count Algorithm software *(modified)* was employed, in the study

**Results:** The demonstration of desmin was apparent mainly in the smooth muscle cells of the oviductal wall and highest immunoreactivity was found to be in the proestrous phase. In the treated group; high decline in the staining reactivity was found, especially in T I group. The demonstration of vimentin reaction was evident mainly in the lamina propria stromal cells and the tunica muscularis of the rat oviduct. The immunoreactivity was found to be high in the proestrous phase. In the treated group; profound reduction in the staining reactivity of the lamina propria and smooth muscle cells was found, especially in T I group and little immunoreactivity for vimentin receptors in treated groups. This due to effect of combine hormonal therapy (estrogen and progesterone) on alternation immunogenic configuration of vimenin and desmin intermediate filaments of rat oviduct cells.

**Conclusion:** The combined therapy reveals that desmin and vimentin are essential for cell integrity and apply as indicator for metaplastic activity of cells.