**18.Peritoneal fluid progesterone and progesterone resistance in superficial endometriosis lesions**

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Abstract

Peritoneal fluid in ovulatory women is an ovarian exudate with higher estrogen and progesterone concentrations than in plasma. In the follicular phase, progesterone concentrations are as high as plasma concentrations in the luteal phase. After ovulation, estrogen and progesterone concentrations in the peritoneal fluid are 5-10 times higher than in plasma, both in women with and without endometriosis. The histologically proliferative aspect without secretory changes of most superficial subtle lesions is not compatible with the progesterone concentrations in the peritoneal fluid. Therefore, we have to postulate a strong progesterone resistance in these lesions. The mechanism is unclear and might be a peritoneal fluid effect in women with predisposing defects in the endometrium, or isolated endometrial glands with progesterone resistance, or subtle lesions originating from the basal endometrium: the latter hypothesis is attractive since in basal endometrium progesterone does not induce secretory changes while progesterone withdrawal, not occurring in peritoneal fluid, is required to resume mitotic activity and proliferation. Hormone concentrations in the peritoneal fluid are an important factor in understanding the medical therapy of endometriosis. The effect of oestro-progestin therapy on superficial endometriosis lesions seems to be a consequence of the decreased estrogen concentrations rather than a direct progestin effect. In conclusion, the peritoneal fluid, being a secretion product of the ovarian follicule, deserves more attention in the pathophysiology and treatment of endometriosis.

Keywords: endometriosis etiology; endometriosis; endometriosis in young women; endometriosis pathogenesis; endometriosis pathology; peritoneal fluid; progesterone resistance.