**THE ROLE OF OXIDATIVE STRESS ON ASSISTED REPRODUCTIVE TECHNOLOGY**

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**Introduction.** According to recent studies, the maturation of the egg in the follicular fluid activates the oxidation processes, with the induction of superovulation indicators of oxidative stress (OS) increase tenfold. This process has a damaging effect on cellular structures, increases the level of reactive oxygen species (peroxides and free radicals) and their inactivation is by an antioxidant system. If the strength of the OS exceeds the body's defenses, the processes of apoptosis are activated, which leads to cell death. As a marker of oxidative stress and deficiency of antioxidants, 8-isoprostane produced by oxygen radicals in the oxidation of tissue phospholipids has been proposed. In the body there are powerful levers of antioxidant effects, one of them is melatonin. Aim to study the content of melatonin and 8-isoprostane in blood serum and follicular fluid on the background of controlled ovarian stimulation (COS).

**Materials and methods.** The content of melatonin and 8-isoprostane in serum and follicular fluid was studied against controlled ovarian stimulation in 66 patients with infertility who were divided into 2 equal groups. The control group consisted of 33 healthy women of reproductive age.

**Results.** Melatonin has been found to havepronounced antioxidant action, thereby increasing the number of oocytes obtained in poor responders, and 8-isoprostane is a reliable indicator of OS and the work of the antioxidant system in blood serum and follicular fluid. The use of antagonists and agonists of gonadotropic hormones to induce superovulation leads to an increase in the processes of OS in the follicular fluid, which has a damaging effect on the egg, thereby reducing the effectiveness IVF.

**Conclusions.** 8-isoprostane has proven to be a reliable indicator of oxidative stress and the work of the antioxidant system, its content has an inverse relationship with the number of eggs obtained after COS. Melatonin has a pronounced antioxidant effect, thereby increasing the number of oocytes obtained in patients with reduced ovarian reserve. In group II of patients who received melatonin at a dose of 20 mg per day for preventive purposes, the number of eggs obtained was 2.3 times higher.