

8. SUMMARY:

Macroscopic Investigation of The Changes In Androgen-Dependent Genital Organs of Male Rat Offspring Caused by Administration of 5-Alpha Reductase Inhibitor (Dilaprost; Biopharma) To Pregnant Rats and The Effect of the Epidermal Growth Factor (EGF) Level Within The Blood and Urethral Tissue In a Hypospadias Model

Hypospadias is an anomaly where the external urethral meatus is localized ectopically on the ventral side and proximal part of the penis. Its treatment is surgical. The aims of the surgery are to create a functional and cosmetically acceptable penis and to succeed this with least complications. The most common complication seen during postoperative period is urethrocutaneous fistula. In this study, we created a model of hypospadias and investigated the effects of postoperative EGF levels within blood and urethral tissue on wound healing.

In our study, we administered finasteride and corn oil to 40 pregnant adult Wistar Albino rats on 10th-20th days of pregnancy. One group was reserved for control group. Blood samples were taken from rats on 21st day of pregnancy and EGF levels were measured. Eighteen male rat offsprings were taken from each group and ventral parts of their urethras were excised. Blood samples were taken and EGF levels were measured in both urethra and blood samples. Postoperative wound healing was evaluated regarding inflammation and fibrosis. Mann-Whitney U and Kruskal-Wallis one-way analysis of variance tests were used in order to evaluate intergroup variables. $p < 0.05$ was accepted as statistically significant.

Eventually, after administration of finasteride to pregnant rats, no significant changes were detected in the urogenital systems of their offspring. None of the 54 male offspring developed ectopic testis, undescended testis, nipple abnormalities and decrease in anogenital distance. EGF levels within the urethras of rat offspring did not change significantly ($p > 0.05$). Postoperatively, wound healing independent of tissue EGF (inflammation, fibrosis) did not differ significantly. Blood EGF levels of pregnant rats in control group were significantly higher than that of finasteride administered pregnant rats ($p < 0.05$). In conclusion, in our study, we didn't detect any significant differences in terms of wound healing; because there weren't any significant differences in tissues of rat offspring exposed to finasteride and finasteride has accelerating and inflammation-reducing effect on wound healing. We demonstrated that finasteride does not affect the urogenital system morphologically and does not decrease the blood and tissue EGF levels. However, it accelerates the wound healing process. The presence of no significant difference between rat offspring groups regarding showed that blood EGF level measurements could not guide us.

Key words: hypospadias, finasteride, EGF, wound healing

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