

## **Abstract**

Sulpiride induces hyperprolactinemia which may lead to benign prostatic hyperplasia especially in old age. Metformin was used in the treatment of cancer prostate due to its apoptotic effect. **Aim of the work:** to demonstrate the effect of metformin against sulpiride induced prostatic hyperplasia in adult male albino rats.

**Materials & Methods:** 40 adult male albino rats were included in the present study. They were equally divided into 4 equal groups (10 rats each). Group I: served as control group. Group II (sulpiride group) received sulpiride (125 mg/kg/day orally). Group III (metformin group) received metformin (125mg/kg/day) orally. Group IV (combined group) received sulpiride (125 mg/kg/day) and metformin (125mg/kg/day) orally. All groups were subdivided into 2 equal subgroups: a & b (5 rats each) which were treated for 20 and 40 days respectively. The prostatic sections were stained with H&E stain, Masson's trichrome stain and immunohistochemical staining for PCNA & Caspase-3. The mean area % for collagen and the mean area % for PCNA, Caspase-3 were measured using the image analyzer and the results were statistically analyzed.

**Results:** There was epithelial proliferation and increase of the fibro muscular stroma in groups II, III & IV (with peak in group IV) compared to control group. The PCNA reaction and area % of collagen were significantly increased in groups II, III & IV compared to control group and in group IV compared to group II. **Conclusion:** It could be concluded that administration of metformin with sulpiride may accelerate the process of prostatic hypertrophy or hyperplasia.

**KEY WORDS:**

Prostatic hyperplasia, prolactin, sulpiride, metformin, PCNA, Caspase-3, collagen.