SUMMARY AND CONCLUSION

The present work was carried out on adult male albino rats and designed to demonstrate the effect of nitric oxide substrate, L-Arginine, and nitric oxide inhibitor, L-NAME, on corticosterone, blood glucose and lipid profile (cholesterol, LDL, HDL and triglycerides) levels, and this under the effect of different types of stress as cold stress ,acute immobilization stress and chronic Immobilization stress .

The present study includes the following groups:

a-Group 1(control group):

In which rats were left undisturbed without exposure to stress or to drug administration but exposed to handling only.this group was carried out to study the basal level of corticosterone,lipid profile and blood glucose in rats.

b-Group 2 (stress group):

Were carried out to study the effect of different types of stress on the level of corticosterone,lipid profile and blood glucose in rats. This group divided into 3 subgroups:

The 1st subgroup:

Exposed to cold stress .

The 2nd subgroup:

Exposed to acute immobilization stress

The 3rd subgroup:

Exposed to chronic immobilization stress

c-Group 3 (L-NAME group):

Were carried out to study the effect of L-NAME on the level of corticosterone,lipid profile and blood glucose in rats. Under the

effect of different types of stress .This group divided into 3 subgroups:

The 1st subgroup:

Rats injected with L-NAME prior to exposure to cold stress .

The 2nd subgroup:

Rats injected with L-NAME prior to exposure to acute immobilization stress .

The 3rd subgroup:

Rats injected with L-NAME prior to each period of stress in case of chronic immobilization stress for 9 days.

d-Group 4 (L-Arg. group):

Were carried out to study the effect of l-arginine on the level of corticosterone, lipid profile and blood glucose in rats. Under the effect of different types of stress .This group divided into 3 subgroups:

The 1st subgroup:

Rats injected with l-arginine prior to exposure to cold stress .

The 2nd subgroup:

Rats injected with l-arginine prior to exposure to acute immobilization stress .

The 3rd subgroup:

Rats injected with l-arginine prior to each period of stress in case of chronic immobilization stress for 9 days.

The results of the present work show that :

In group 2 :

All types of stress causes significant elevation of corticosterone ,blood glucose and lipid profile levels in rats except HDL.

In group 3:

L-NAME given to rats prior to each type of stress causes significant elevation of corticosterone ,blood glucose and lipid profile levels in rats, in comparison to stress only exept in case of chronic stress,there is no significant elevation of corticosterone level.

In group 4:

L-arginine given to rats prior to each type of stress causes significant decrease of corticosterone and lipid profile levels in rats, in comparison to stress only exept in case of chronic stress,there is no significant elevation of corticosterone level.

From these results , it can be concluded that :

1- All types of stress causes significant elevation of corticosterone ,blood glucose and lipid profile levels in rats except HDL.

2-Inhibition of the basal NO by L-NAME potentiats the effect of acute stress on corticosterone ,blood glucose and lipid profile levels in rats.

3- Inhibition of the basal NO by L-NAME causes no effect on corticosterone, blood glucose and lipid profile levels which were produced by chronic stress.

4-The increased NO production by L-arginine has inhibitory effect on the corticosterone and lipid profile levels produced by acute stress.

5- The increased NO production by L-arginine has inhibitory effect on the lipid profile levels but has no effect on the corticosterone levels produced by chronic stress.

6- The acute increased NO production by L-arginine has non-significant decrease in the blood glucose levels produced by acute stress.

7- chronic increased in NO production by L-arginine causes significant decrease in blood glucose level induced by chronic stress.

Recommendation :

1-Doing more period of chronic stress to detect whether adaptation to stress occurs or not.

2- Using larger dose of L-arginine or nitric oxide donors to detect its effect on blood glucose level under the effect of stress.

3-Using mediators other than nitric oxide in this study to detect other mediators of stress.