Summary

Tizanidine hydrochloride (sirdalud) is one of muscle relaxant drugs. The present study work aimed to study the following parameters under normal and experimental condition (intraperitonealy injection of rats by different doses of tizanidine for different periods of time.

1) Identification of the drug by different and suitable analytical methods.

2) Estimation of the drug concentration in some tissues of rats injected intraperitonealy by different doses at different periods of time.

3) Studding the effects of the drug administration on some serum and liver metabolites and enzymes.

The results obtained can be summarized as follow:-

1. Color tests revealed that some chemical reagents are specific to identify tizanidine (e.g Zwikker and Chen-Kao reagent).

2. Different coloring reagents were sprayed on the chromatoplate (of TLC) and the results revealed that some reagent may be specific for the identification of studied drug.

3. The chromatographic behavior of drug on silica gel (G_{254}) is considered important for its identification, for tizanidine there were different calculated R_f values with different eluents.

4. The present study revealed that UV spectra of studied drug was 319 nm.

5. HPLC chromatograms of tizanidine demonstrated that retention time (R_t) was 1.777 min.

6. The present study recorded that, the order of the drug concentrations in tissue samples were liver > kidney > spleen > femoral > muscle > brain > hair.

7. Although, serum glucose level was found significantly increased in all treated groups, it was found insignificantly increased only in group 5 (10mg/100g b.wt for 6 h.) as compared to control.

8. Serum and liver protein concentration, serum total protein was found insignificantly changed except in group 3 (5mg/100g b.wt for 6 h.) it was decreased significantly. Meanwhile, liver protein insignificantly increased in all treated group.

9. Statistically, serum total protein decreased significantly in group 3,4 and 5 as compared to control (G_1).

10. Serum triglycerides and cholesterol concentration was found insignificantly changed in all treated groups except in group 4 (10mg/100g b.wt for 3h.).

11. Although, serum aspatate aminotranferase (AST) activity was significantly decreased only in group 3, it was insignificantly changed in other treated group as well as in liver AST.

12. Although, serum alanine aminotransferase (ALT) activity was found significantly decreased only in G4 and G5, it was insignificantly changed in the other treated groups as well as in liver ALT activity.

13. Liver glycogen concentration was found significantly decreased in G4 and G5 (10mg/100mg b.wt after 3 and 6 h. of drug administration respectively.