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The present investigation dealing with the effect of lupin seeds, foenugreek seeds, mulberry leaves and nabk leaves as well as their mixture (in equal parts) on blood glucose level of normal and STZ-diabetic rats.Also, their effect on liver, kidney, lipids, minerals and haemoglobin was studied. These herbs were used in two doses 2.7 gm and 5.4 gm/kg b.w. 300 rats (100-120 g) were used in 3 main experiments :

1. Effect of different treatments on normal rats.

This experiment aimed to study the effect of different plants on blood sugar of normal rats for 16 weeks as well as their effect on hepato-renal functions, lipids, minerals and haemoglobin.

A total of 132 albino rats were divided randomly into equal 11 groups (12 rats each). The first group remained untreated and served as control and the other groups of rats were received normal diet plus one of the different treatments as follows:

Group 1 : Control rats,received only normal diet .
Group 2 : Received normal diet plus lupin (2.7 gm/kg b.w)
Group 3 : " " " " (5.4 gm/kg b.w)
Group 4 : " " foenugreek (2.7 gm/kg b.w)
Group 5 : " " " " (5.4 gm/kg b.w)
Group 6 : " " mulberry (2.7 gm/kg b.w)
Group 7: " " " " (5.4 gm/kg b.w)

Group 8 :	"	"	nabk	(2.7 gm/kg b.w)
Group 9 :	"	"	"	(5.4 gm.kg b.w)
Group 10:	"	"	mixture	(2.7 gm/kg b.w)
Group 11 :	"	"	"	(5.4 gm/kg b.w)

Blood samples were collected before the start of experiment and then after 4,8 and 16 weeks. The following parameters were carried out : hemoglobin, blood glucose, alkaline phosphatase, transaminases, total protein, albumin , urea, creatinine, uric acid, total and ionized calcium, inorganic phosphorus , sodium, potassium, cholesterol and triglycerides.

The results of this experiment revealed the possibility of using these plants as save anti-diabetic agents. No significant toxic effect was observed during the course of experiment. However some fluctuations in some parameters were noted such as increases in the level of AST, urea and cholesterol or decreases in serum total proteins, albumin in some groups , but all these changes are in the allowed levels.

2. The protective effect of different treatments against hyper-glycemia.

Previous rats which were used in the first experiment were continued in this part of thesis. The first group of animals was redivided into 2 equal sub-groups, the first remained as negative control and the other sub-group was received STZ and served as positive control group. The other groups were also injected with STZ and subjected to the different treatments for 14 days.

STZ was s.c injected in a dose equivalent to 27.5 mg/kg b.w and then followed by a booster dose after 3 days equivalent to 11.25 mg/kg b.w. Blood samples were withdrawn from the individual rats before treatment and then after 3,7 and 14 days.

STZ caused a significant increase in bl-sugar by 45.7% after 2 wks from its injection compared to the control group. The other groups which received the different plants were displayed a variable response comparing to the positive control group. It was concluded that NK leaves and ML leaves at a dose of 5.4 gm/kg b.w were significantly affected bl. glucose level .

3. The curative effect of different treatments against hyperglycemia.

In this experiment, 168 rats were used and divided randomly into equal 14 groups (12 rats each). The first group remained untreated and served as negative control. Rats in the second group were injected STZ and served as positive control. The rest of groups were also injected with STZ and subjected to the different treatments for 4 wks. Diamicron (14.4mg/kg b.w) and Metaformin (45 mg/kg b.w)were used as standard hypoglycemic drugs.

The results revealed that all plants used have a tendency to play a role as a hypoglycemic substances. The antidiabetic effect of the different plants is dependent upon the active constituents and their concentrations as well as the dose and duration of treatments. The prementioned exerts their hypoglycemic effect due to the preseof alkaloids, saponins, flavonoids, nicotinic acid, nicotinamide, glycoproteins and manganese.

The administration of MIX caused a significant hypoglycemic effect as a protective or curative agent, unfortunately this MIX caused significant increase in serum cholesterol during the course of experiment. We highly recommended to carry out further investigation to study the effect of this MIX on lipid pattern in normal and STZ diabetic animals in short and long period time. Also, another species of animals i.e rabbits or guinea pigs should be used in order to assessment the possibility of using this mixture as a safe antidiabetic agent.