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Screening of Anti-Hyperlipidaemic Activity of Caprificus Insectifera in Albino rats feed with high fat diet

Sai Jyothi Ausali*[1], Ramya sree D [2], Swathi Vadduri[3]

[1]*Assistant Professor Department of Pharmacology, MNR College Of Pharmacy, Sangareddy, India.*
[2]*Assistant Professor Department of Pharmacology, MNR College Of Pharmacy, Sangareddy, India.*
[3]*Assistant Professor Department of Pharmaceutics, MNR College Of Pharmacy, Sangareddy, India.*

Corresponding author: Sai Jyothi Ausali
Email: saijyothi.28.sj@gmail.com

ABSTRACT

The Common fruit *Caprificus Insectifera* is a deciduous treegrowing to heights of up to 6 meters (19 ft).When it comes to nutritional fruits, fruits can hold their place against any other fruit. This remarkable fruit has a history dating 5000 years. The fruits contain a high amount (70%) of sugar (glucose and fructose in the same quantity), pectins, flavonoids and vitamins. It is proposed that the flavonoids contained in the fruit aqueous extract may contribute to the hypolipidemic action. Obesity is a medical condition in which excess body fat has accumulated to the extent that it may have an adverse effect on health, leading to reduced life expectancy and/or increased health problems. Obesity is often associated with the increasing of a number of chronic diseases such as Insulin resistance diabetes mellitus, Hypertension, Hypercholesterolemia, Cerebrovascular accident (CVA), Heart attack, Congestive cardiac diseases, Cancer, Gallstone formation, Gout, etc. The anti-obesity effect of fig fruit in animals fed on cafeteria and atherogenic diet was evaluated. The animals were divided into three major group's viz. Normal diet, Cafeteria diet and Atherogenic diet. Under these groups, they were further divided into five sub-groups. The first sub-group consists of control animals and they were not treated with any drug. The second sub-group was treated with the standard drug, i.e. Ayurslim. The third, fourth and fifth sub-groups were treated with fig extract at the dose of 200, 300 and 400 mg/kg respectively. The treatment period was 40 days. After 40 days, change in body weight, lipid profile and CNS activity were evaluated in all the groups and it was found that the fig extract showed anti obesity activity by decreasing the body weight and the levels of total cholesterol.

Keywords: Caprificus Insectifera, Hypercholesterolemia, Diabetes Mellitus, Cafeteria Diet, Atherogenic Diet.

INTRODUCTION

Obesity

Obesity is a medical condition in which excess body fat has accumulated to the extent that it may have an adverse effect on health, leading to reduced life expectancy and/or increased health problems.[1, 2] Body mass index (BMI), a measurement which compares weight and height, defines people as overweight (pre-obese) if their BMI is between 25 to 30 kg/m^2, and obese when it is greater than 30 kg/m^2. BMI[3] is calculated by dividing the subject's mass by the square of his or her height, typically expressed either in metric or US "customary" units.

Table 1: Body Mass Index

Weight Categories	BMI (kg/m^2)
Underweight	< 18.5
Healthy Weight	18.5-24.9
Overweight	25-29.9
Obese	30-34.9
Severely Obese	35-39.9
Morbidly Obese	≥40

Causes of Obesity

The fundamental cause of obesity and is an energy imbalance between calories consumed and calories expended. Globally, there has been.

- An increased intake of energy-dense foods that is high in fat, salt and sugars but low in
- vitamins, minerals and other micronutrients.
- A decrease in physical activity due to the increasingly sedentary nature of many forms of work, changing modes of transportation, and increasing urbanization.

MATERIAL AND METHODOLOGY

Source of Data

Data will be obtained from laboratory based studies by using albino rats weighing between 200-250 gms maintained at room temperature having free access to food (std pellet diet), tap water at labium. These studies will be supported by biochemical data.

Instruments And Chemical Required

Sl.No.	Instruments	Manufactured company
1	UV-Visible Spectrophotometer	UV-1800 Shimadzu, Model, Mfg by Shimadzu Carporation.
2	Centrifuge	Research centrifuge, Mfg by Remi Instruments Ltd, Mumbai
3	Tissue Homogenizer	Type: RO-127A, Mfg by Rajendra Elect, IND.Ltd, Remi Instruments Division, Vasai
4	Sonicator	Pci made in Mumbai.
5	Milli pore water collector	Mfg by TKA smart pure made in Made in Germany
6	Soxhlet apparatus	Agarwal
7	Rotory evaporator	Medika instrument Mfg co.
8	UV chamber	Singhla sciences, Ambala

Experimental Animals

Laboratory bred Albino rats (200-250 gm) were used in this study. Prior to the experiment the rats were housed in a clean polypropylene cages (6 rats/ cages) for a period of 7 days under standard temperature (25 - 30o c) , relative humidity (45 – 55%), dark / light cycle (12 /12 hrs). The studies were performed with the approval of Organisational Animal Ethics Committee (OCED) . The animals were put in overnight fasting were deprived of food for 16 hrs but allowed free access of water.

Collection of plant material

The fresh fruits were collected from local market. The fruits were cleaned to remove impurities and cut into small pieces and shade dried,pulverized by a mechanical grinder.

Preparation of ethanolic extract

5g of powdered fruit was soaked in 50ml of ethanol and kept in a shaker for about 48hrs.The extract were then filtered using what manno.1 filter paper.

RESULTS

Table 1:Phytochemical Evaluation of Fruit.

SL NO	TEST	INFERENCE	RESULT
1.	**Test for alkaloids**		
1.a	Hager's test	Yellow colour -	+ve
1.b	Mayer's test	cream precipitate -	+ve
1.c	Dragendroff's test	orange precipitate	+ve
1.d	Wagner's test	red-brown precipitate	+ve
2.	**Test for carbohydrates**		
2a	Molish test	Violet colour	+ve
2b	Fehling's test	Break red colour	+ve
2c	Borfoed's test	Red colour	+ve
2d	Benedict's test	Red colour	+ve
3.	**Test for steroids, triterpenoids and glycosides**		
3a	Liebermann-buchard test	Redish- violet colour	-ve
3b	Salkowski test	Red colour	-ve
3c	Baljet test	Orange colour	-ve
3d	Keller killani test	Red colour	-ve
4.	**Test for saponins**		
4.a	Froth test	1 cm foam	-ve
4.b	Haemolytic test	No precipitate	-ve
5	Test for tannins		
5.a	Ferric chloride test	Blue colour	+ve
5.b	Lead acetate test	Yellow colour	+ve
6	**Test for proteins and Amino acids**		
6.a	Millon's test	Red colour	+ve
6.b	Biuret test	Violet colour	+ve
6.c	Ninhydrin test	Violet colour	+ve

Acute Toxicity Studies

Extract of *Ficuscarica* did not produce any toxic symptoms or mortality up to the dose level of 2000 mg/kg body weight. There was neither change in behavioural pattern or any sign of toxicity during the observations up to 24hrs for mortality. Thus the extract was considered to be safe for pharmacological evaluation. Biological evaluation was carried out at doses of 200 and 400mg/kg.

Toxicological evaluations of *caprificus Insectifera*

Table 2: Acute Toxicity observations.

S.NO	Response	
1	Alertness	Normal
2	Grooming	Absent
3	Anxiety	Absent
4	Roaming	Normal
5	Sniffing	Normal
6	Tremors	Absent
7	Convulsion	Absent
8	Depression	Normal
9	Gripping strength	Normal
10	Scratching	Absent
11	Defecation	Absent
12	Writhing	Normal
13	Pupils	Normal
14	Urination	Normal
15	Salivation	Normal
16	Skin colour	Normal
17	Lacrimation	Normal

Result

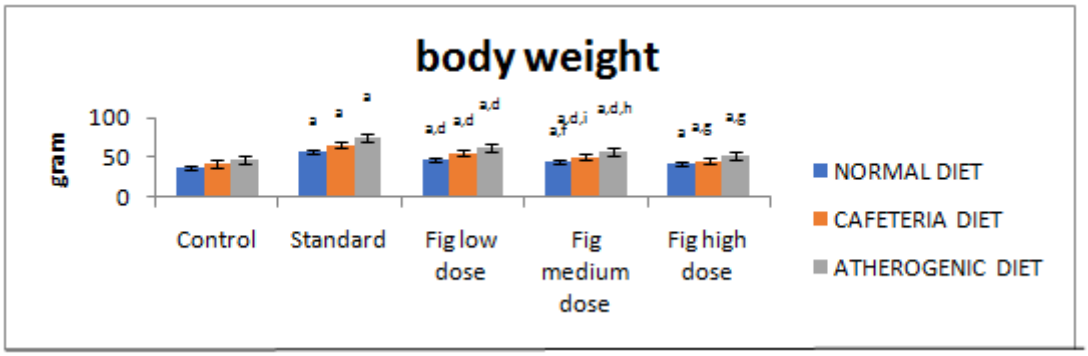
From acute toxicity study it was observed that the administration of Ficus Caria to mice did not induce any toxicity of extract and mortality in the animals up to 2000mg/kg orally.

Parameters used to evaluate obesity

Body Weight

Table 3: Body weight.

GROUP	NORMAL DIET	CAFETERIA DIET	ATHEROGENIC DIET
Control	37.33±2.61	42.33±0.95	48.16±1.04
Standard	57.33±0.80[a]	65.66±0.66[a]	75.16±1.22[a]
Fig low dose	47.33±0.49[a,d]	55.66±0.66[a,d]	62.5±1.25[a,d]
Fig medium dose	44.66±1.54[a,f]	51±1.23[a,d,ı]	57±0.85[a,d,h]
Fig high dose	42±0.73[a]	45.66±1.49[a,g]	52±0.73[a,g]

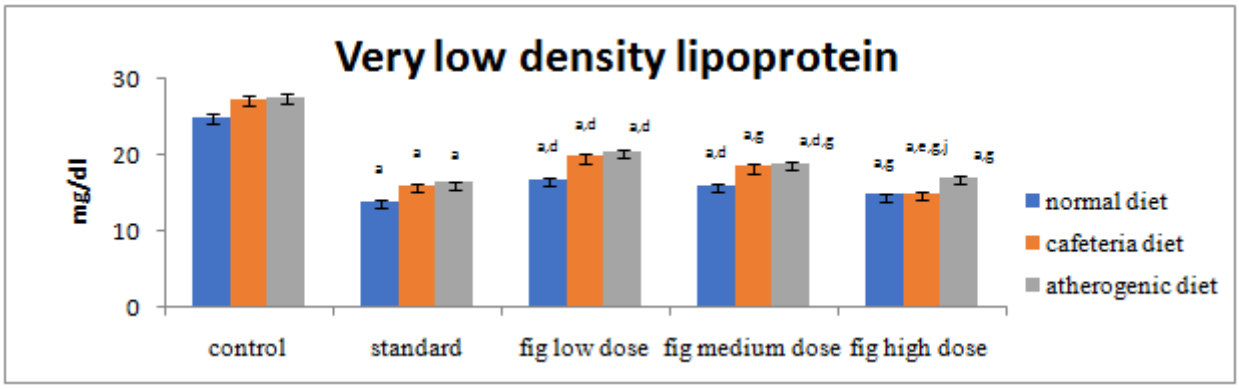


All values are mean±SEM;[a]p<0.001 when compared with control;[d]p<0.001 when compared with standard;[f]p<0.05 when compared with standard;[g]p<0.001 when compared with low dose;[h]p<0.01 when compared with low dose;[i]p<0.05 when compared with low dose.

High-density lipoprotein

Table 9: High-density lipoprotein

All values are mean±SEM;[a]p<0.001 when compared with control;[d]p<0.001 when compared with standard;[f]p<0.05 when compared with standard;[g]p<0.001 when compared with low dose;[h]p<0.01 when compared with low dose;[j]p<0.001 when compared to medium dose.

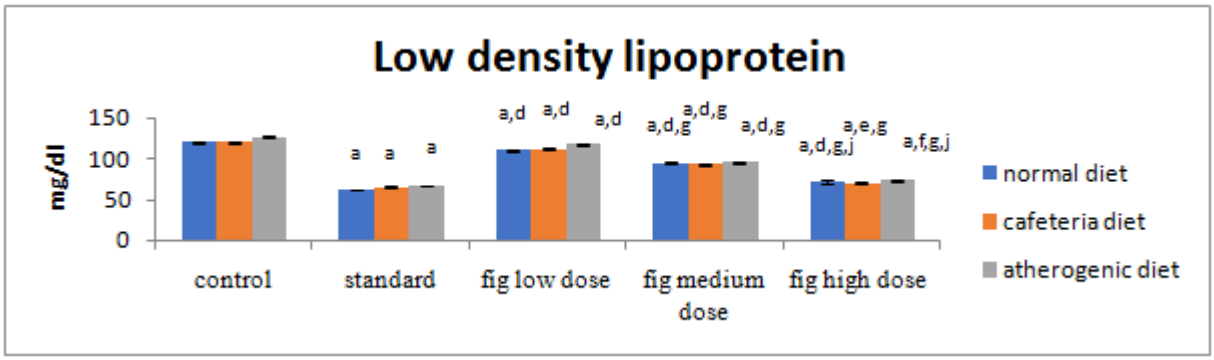


Low Density Lipoprotein

Table 4: Low Density Lipoprotein

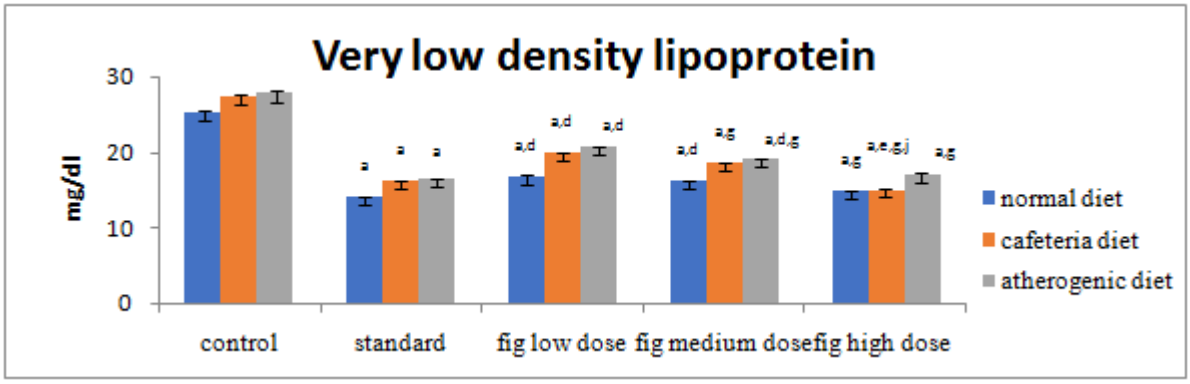
GROUP	NORMAL DIET	CAFETERIA DIET	ATHEROGENIC DIET
Control	25.11±0.45	27.38±0.37	27.75±0.39
Standard	14.01±0.09[a]	16.13±0.14[a]	16.45±0.10[a]
Fig low dose	16.82±0.24[a,d]	19.93±0.12[a,d]	20.65±0.13[a,d]
Fig medium dose	16.14±0.08[a,d]	18.62±0.11[a,g]	19±0.11[a,d,g]

Fig high dose	14.92±0.08[a,g]	15±0.08[a,e,g,j]	17.11±0.11[a,g]



All values are mean±SEM;[a]p<0.001 when compared with control;[d]p<0.001 when compared with standard;[e]p<0.01 when compared with standard;[g]p<0.001 when compared with low dose;[j]p<0.001 when compared to medium dose;[f]p<0.05 when compared with standard.

Very Low Density Lipoprotein



All values are mean±SEM;[a]p<0.001 when compared with control;[d]p<0.001 when compared with standard;[e]p,0.01 when compared with standard;[g]p<0.001 when compared with low dose;[j]p<0.001 when compared to medium dose.

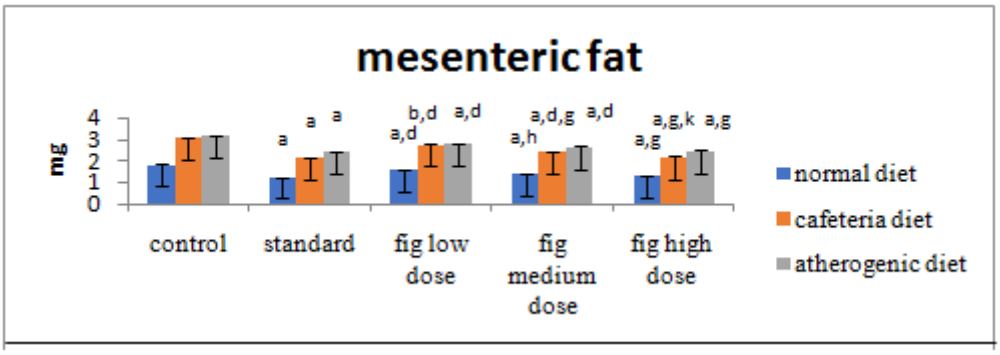
Table 5: Very Low Density Lipoprotein

GROUP	NORMAL DIET	CAFETERIA DIET	ATHEROGENIC DIET
Control	25.11±0.45	27.38±0.37	27.75±0.39
Standard	14.01±0.09[a]	16.13±0.14[a]	16.45±0.10[a]
Fig low dose	16.82±0.24[a,d]	19.93±0.12[a,d]	20.65±0.13[a,d]
Fig medium dose	16.14±0.08[a,d]	18.62±0.11[a,g]	19±0.11[a,d,g]
Fig high dose	14.92±0.08[a,g]	15±0.08[a,e,g,j]	17.11±0.11[a,g]

Mesenteric fat

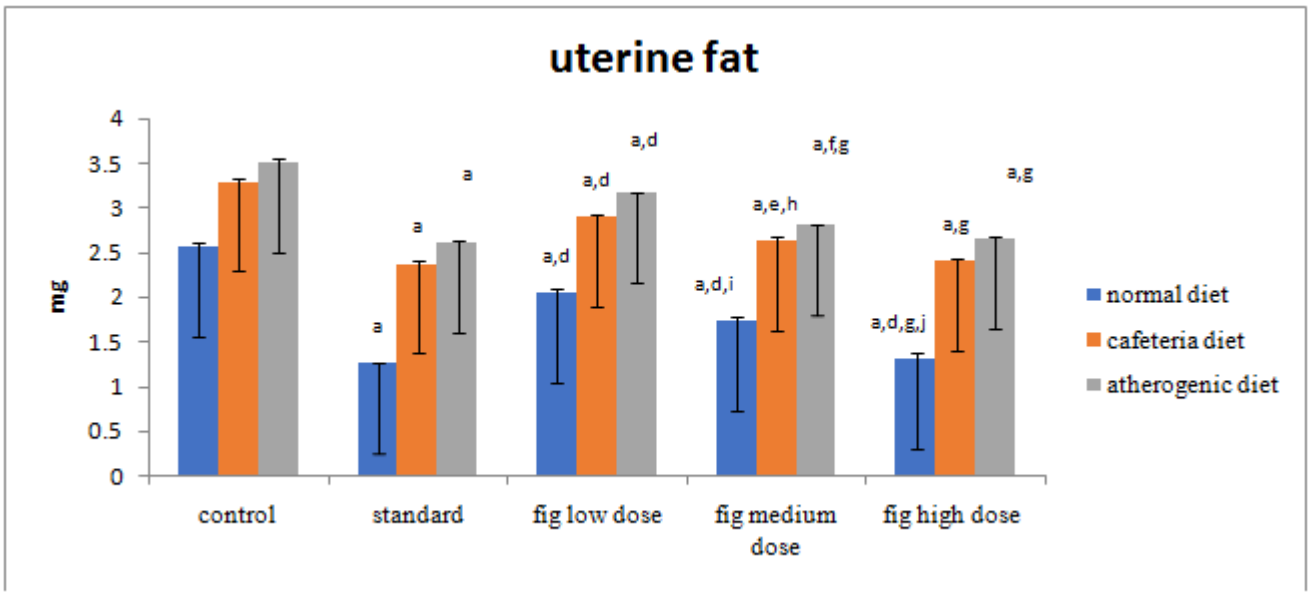
Table 6: Mesenteric Fat

GROUP	NORMAL DIET	CAFETERIA DIET	ATHEROGENIC DIET
Control	1.806±0.03	3.03±0.01	3.16±0.03
Standard	1.245±0.02[a]	2.1±0.04[a]	2.40±0.03[a]
Fruit low dose	1.56±0.04[a,d]	2.73±0.03[b,d]	2.8±0.02[a,d]
Fruit medium dose	1.36±0.04[a,h]	2.41±0.05[a,d,g]	2.63±0.04[a,d]
Fruit high dose	1.82±0.03[a,g]	2.15±0.06[a,g,k]	2.44±0.05[a,g]



All values are mean±SEM;[a]p<0.001 when compared with control;[d]p<0.001 when compared with standard;[e]p<0.01 when compared with standard;[g]p<0.001 when compared with low dose;[j]p<0.001 when compared to medium dose.

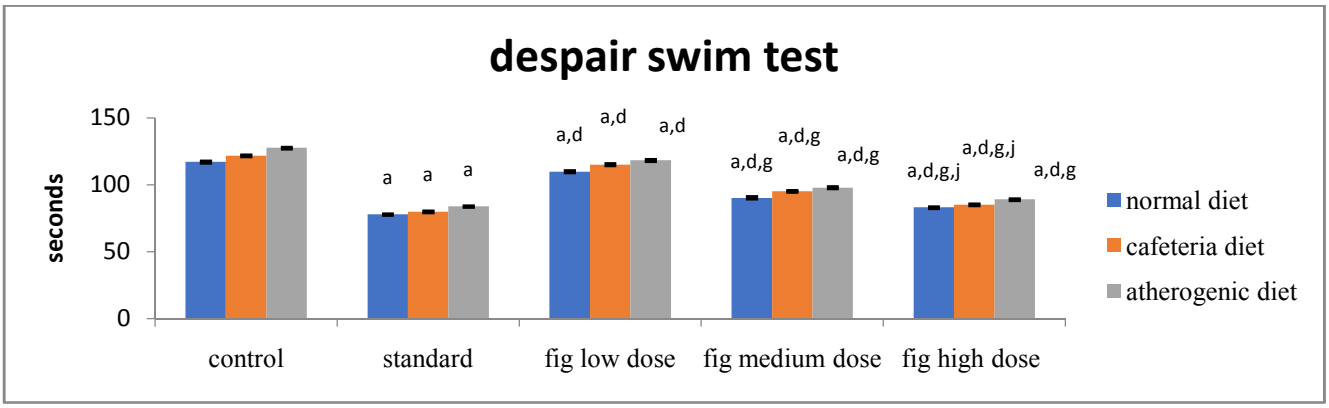
Uterine fat



All values are mean±SEM;[a]p<0.001 when compared with control;[b]p<0.01 when compared with control;[d]p<0.001 when compared with standard;[g]p<0.001 when compared with low dose;[h]p<0.01 when compared with low dose;[k]p<0.01 when compared with medium dose.

Despair Swim test

Table 15: Despair Swim Test

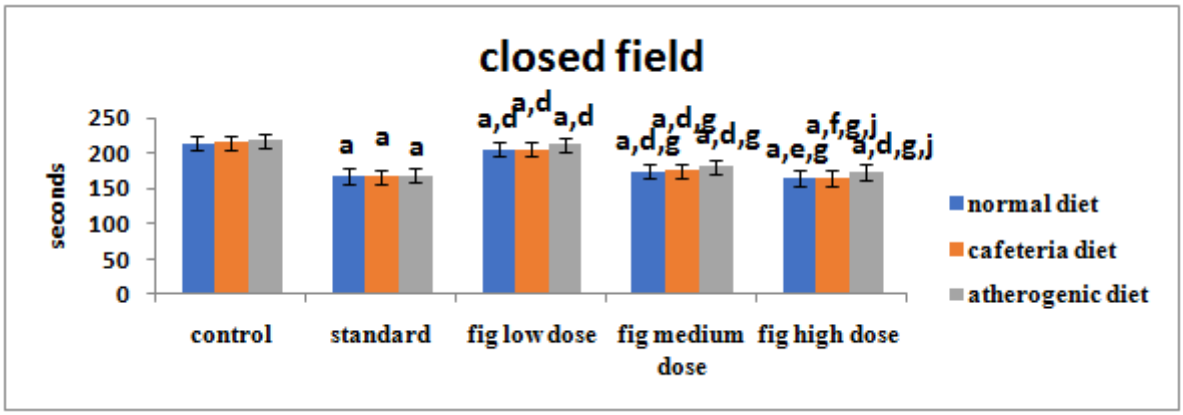


All values are mean±SEM;[a]p<0.001 when compared with control;[d]p<0.001 when compared with standard;[e]p<0.05 when compared with standard;[g]p<0.001 when compared with low dose;[h]p<0.01 when compared with low dose;[i]p<0.05 when compared with low dose;[j]p<0.001 when compared to medium dose

Elevated Plus Maze Closed Field

Table 7: Elevated Plus Maze Closed Field

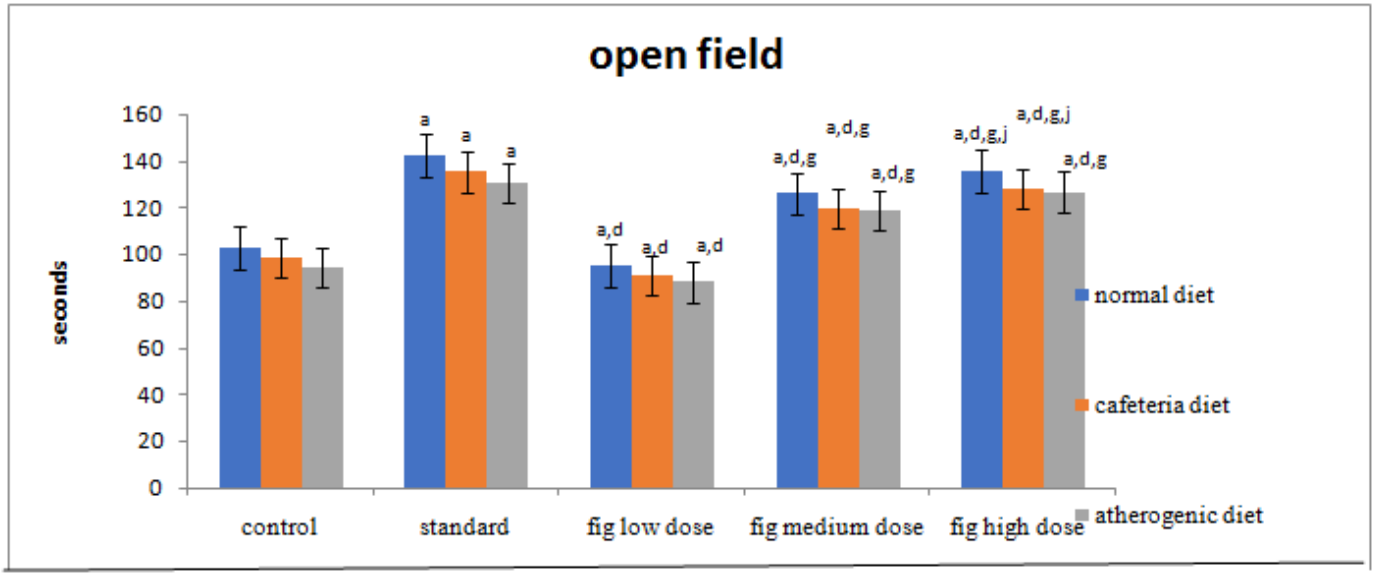
GROUP	NORMAL DIET	CAFETERIA DIET	ATHEROGENIC DIET
Control	214.33±0.49	216.5±0.67	218.5±0.42
Standard	167.83±0.73[a]	168.33±0.55[a]	169±0.63[a]
Fruit low dose	205.66±0.61[a,d]	206.83±0.60[a,d]	211.66±0.42[a,d]
Fruit medium dose	174.66±0.49[a,d,g]	177.83±0.40[a,d,g]	181.66±0.49[a,d,g]
Fruit high dose	164.66±0.42[a,e,g]	168.66±0.33[a,f,g,j]	173.33±0.49[a,d,g,j]



All values are mean±SEM;[a]p<0.001 when compared with control;[d]p<0.001 when compared with standard;[f]p<0.05 when compared with standard;[g]p<0.001 when compared with low dose;[j]p<0.001 when compared to medium dose.

Elevated Plus Maze Open Field

Table 8: Elevated Plus Maze Open Field



All values are mean±SEM;[a]p<0.001 when compared with control;[d]p<0.001 when compared with standard;[g]p<0.001 when compared with low dose;[j]p<0.001 when compared to medium dose.

DISCUSSIONS

The pharmacological studies of extract showed that, extract possessed Antiobesity activity to varying extent. It showed that alkaloids present in these extract may be responsible for the pharmacological action. Anti-obesity activity may be attributed by the presence of various phyto-consitiuents such as alkaloids, tannins, carbohydrates, flavonoids. As per OCED 420 Antitoxicity in the limit.

Body weight

Body There was a significant decrease in the body weight in all the other groups when compared with the normal diet ($p<0.001$).This indicates that standard drug and all the fruit preparations effectively help in weight reduction.
In the normal diet fruit high dose showedasignificantactivity ($p<0.001$) when compared to the control whereas did not show a significant activity when compared to the standard. Fruit medium dose showed a significant activity ($p<0.001$) when compared to control and ($p<0.05$) when compared to standard. Fruit low dose showed a significant activity ($p<0.001$) when compared to control and ($p<0.001$) when compared to standard.
In cafeteria diet fruit high dose shows a significant activity ($p<0.001$) when compared to control and ($p<0.001$) when compared to low dose. Fruit medium dose showed a significant activity ($p<0.001$) when compared to control,($p<0.001$) when compared to standard and($p<0.05$) when compared to low dose. Fruit low dose showed significant activity showed a significant activity ($p<0.001$) when compared to control and ($p<0.001$) when compared to standard.
In atherogenic diet fruit high dose showed significant activity ($p<0.001$) when compared to control and ($p<0.001$) when compared to low dose. Fruit medium dose showed significant activity ($p<0.001$) when compared to control,($p<0.001$) when compared to standard and ($p<0.01$) when compared with low dose. Fruit low dose showed significant activity ($p<0.001$) when compared to control and ($p<0.001$) when compared to standard.
Thus from the above discussion it can be concluded that the standard drug is highly acting than the fruit low dose and the medium dose and the fruit high dose has similar effects like that of the standard drug in effectively reducing the body weight.

Cholesterol

In the normal diet fruit high dose showed a significant activity ($p<0.001$) when compared to control,($p<0.001$) when compared to standard,($p<0.001$) when compared to low dose and ($p<0.001$) when compared to medium dose. Fruit medium dose showed a significant activity ($p<0.001$) when compared to control,($p<0.001$) when compared to standard and ($p<0.001$) when compared to low dose. Fruit low dose showed a significant activity ($p<0.001$) when compared to control and ($p<0.001$) when compared to standard.
In cafeteria diet, fruit high dose showed a significant activity ($p<0.001$) when compared to control,($p<0.05$) when compared to standard and ($p<0.001$) when compared to low dose. Fruit medium dose showed a significant activity ($p<0.001$) when compared to standard and ($p<0.001$) when compared to low dose. Fruit low dose showed a significant activity ($p<0.001$) when compared to control and ($p<0.001$) when compared to standard.
In atherogenic diet, fruit high dose showed a significant activity ($p<0.001$) when compared to control,($p<0.001$) when compared to low dose and ($p<0.001$) when compared to medium dose. Fruit medium dose showed a significant activity ($p<0.001$) when compared to standard and ($p<0.001$) when compared to low dose. Fruit low dose showed a significant activity ($p<0.001$) when compared to control and ($p<0.001$) when compared to standard.
Thus from the above discussion it is evident that there is a significant decrease in the cholesterol level in all the other groups when compared to the control group which indicates that the standard drug and all the fruit preparations are effective in reducing cholesterol levels. The standard drug is most effective and since the fruit highdose is also equally potent as the standard drug since it does not show much significant activity when compared to standard

Triglyecerides

In normal diet, fruit high dose showed a significant activity ($p<0.001$) when compared with control,standard,low dose and medium dose. Fruit medium dose showed a significant activity ($p<0.001$) when compared with control and standard and ($p<0.05$) when compared with low dose. Fruit low dose showed a significant activity ($p<0.001$) when compared with control and standard.
In cafeteria diet, fruit high dose showed a significant activity ($p<0.001$) when compared with control,standard,low dose and medium dose. Fruit medium dose showed a significant activity ($p<0.001$) when compared with control and standard a low dose. Fruit low dose showed a significant activity ($p<0.001$) when compared with control and standard.
In atherogenic diet, fruit high dose showed a significant activity ($p<0.001$) when compared with control, low dose and medium dose and ($p<0.01$) when compared with standard. Fruit medium dose showed a significant activity ($p<0.001$) when compared with control and standard and low dose. Fruit low dose showed a significant activity ($p<0.001$) when compared with control and standard.

High density lipo protein

In normal diet, fruit high dose showed a significant activity ($p<0.001$) when compared to control, low dose and medium dose. Fruit medium dose showed a significant activity ($p<0.001$) when compared with control and standard and ($p<0.01$) when compared with low dose. Fruit low dose showed a significant activity ($p<0.001$) when compared with control and standard.
In cafeteria diet, fruit high dose showed a significant activity ($p<0.001$) when compared to control, low dose and medium dose. Fruit medium dose showed a significant activity ($p<0.001$) when compared with control and standard and ($p<0.01$) when compared with low dose. Fruit low dose showed a significant activity ($p<0.001$) when compared with control and standard.
In atherogenic diet, fruit high dose showed a significant activity ($p<0.001$) when compared to control, low dose and medium dose. Fruit medium dose showed a significant activity ($p<0.001$) when compared with control, standard and low dose .Fruit low dose showed a significant activity ($p<0.001$) when compared with control and standard.

Low density lipo protein

All values are mean±SEM;$^{a}p<0.001$ when compared with control;$^{d}p<0.001$ when compared with standard;$^{e}p<0.01$ when compared with standard;$^{g}p<0.001$ when compared with low dose;$^{j}p<0.001$ when compared to medium dose;$^{f}p<0.05$ when compared with standard.

In normal diet, fruit high dose showed a significant activity ($p<0.001$) when compared with control,standard,low dose and medium dose. Fruit medium dose showed a significant activity ($p<0.001$) when compared with control,standard and low dose. Fruit low dose showed a significant activity ($p<0.001$) when compared with control and standard.
In cafeteria diet, fruit high dose showed a significant activity ($p<0.001$) when compared with control and low dose and ($p<0.01$) when compared with standard. Fruit medium dose showed a significant activity ($p<0.001$) when compared with control, standard and low dose. Fruit low dose showed a significant activity ($p<0.001$) when compared with control and standard.
In atherogenic diet, fruit high dose showed a significant activity ($p<0.001$) when compared with control, low dose and medium dose and ($p<0.05$) when compared with standard. Fruit medium dose showed a significant activity ($p<0.001$) when compared with control, standard and low dose. Fruit low dose showed a significant activity ($p<0.001$) when compared with control and standard.
All values are mean±SEM;[a]$p<0.001$ when compared with control;[d]$p<0.001$ when compared with standard;[e]p,0.01 when compared with standard;[g]$p<0.001$ when compared with low dose;[j]$p<0.001$ when compared to medium dose.

Very low density lipo proteins

In normal diet, fruit high dose showed a significant activity ($p<0.001$) when compared with control and low dose. Fruit medium dose showed a significant activity ($p<0.001$) when compared with control and standard. Fruit low dose showed a significant activity ($p<0.001$) when compared with control and standard.
In cafeteria diet , fruit high dose showed a significant activity ($p<0.001$) when compared with control, low dose and medium dose and ($p<0.01$)when compared with standard. Fruit medium dose showed a significant activity ($p<0.001$) when compared with control and low dose. Fruit low dose showed a significant activity ($p<0.001$) when compared with control and standard.
In atherogenicdiet, fruit high dose showed a significant activity ($p<0.001$) when compared with control and low dose. . Fruit medium dose showed a significant activity ($p<0.001$) when compared with control, standard and low dose. Fruit medium dose showed a significant activity ($p<0.001$) when compared with control and standard.

Mesenteric fat

In normal diet, fruit high dose showed a significant activity ($p<0.001$) when compared with control and low dose. Fruit medium dose showed a significant activity ($p<0.001$) when compared with control and ($p<0.01$) when compared with low dose.Fruit low dose showed a significant activity ($p<0.001$) when compared with control and standard.
In cafeteria diet, fruit high dose showed a significant activity ($p<0.001$) when compared with control and low dose and ($p<0.01$) when compared with medium dose. Fruit medium dose showed a significant activity ($p<0.001$) when compared with control, standard and low dose. Fruit low dose showed a significant activity ($p<0.001$) when compared to standard and ($p<0.01$) when compared with control.
In atherogenic diet, fig fruit high dose showed a significant activity ($p<0.001$) when compared with control and low dose. Fruit medium dose showed a significant activity ($p<0.001$) when compared with control and standard. Fruit low dose showed a significant activity ($p<0.001$) when compared with control and standard.

Uterine fat

In normal diet, fruit high dose showed a significant activity ($p<0.001$) when compared with control,standard,lowdose. Fruit medium dose showed a significant activity ($p<0.001$) when compared with control and standard and ($p<0.05$) when compared with low dose. Fruit low dose showed a significant activity ($p<0.001$) when compared with control and standard.
In cafeteria diet, fruit high dose showed a significant activity ($p<0.001$) when compared with control and low dose. Fruit medium dose showed a significant activity ($p<0.001$) when compared with control and ($p<0.05$) when compared with standard and ($p<0.01$) when compared with low dose. Fruit low dose showed a significant activity ($p<0.001$) when compared with control and standard.
In atherogenic diet, fruit high dose showed a significant activity ($p<0.001$) when compared with control and low dose. Fruit medium dose showed a significant activity ($p<0.001$) when compared with control and low dose and ($p<0.05$) when compared with standard. Fruit low dose showed a significant activity ($p<0.001$) when compared with control and standard.

Despair swim test

the normal diet, fruit high dose showed a significant activity ($p<0.001$) when compared to control,standard,fruit low and medium dose.Fruit medium dose showed a significant activity ($p<0.001$) when compared to control,standard and low dose.Fruit low dose showed a significant activity ($p<0.001$) when compared to standard and control.
In the cafeteriadiet, fruit high dose showed a significant activity ($p<0.001$) when compared to control,standard,fruit low and medium dose.Fruit medium dose showed a significant activity ($p<0.001$) when compared to control,standard and low dose.Fruit low dose showed a significant activity ($p<0.001$) when compared to standard and control.
In the atherogenicdiet,fruit high dose showed a significant activity ($p<0.001$ when compared to control,standard and fruit low dose.Fruit medium dose showed a significant activity ($p<0.001$) when compared to control,standard and low dose.Fruit low dose showed a significant activity ($p<0.001$) when compared to standard and control.

Elevated plus maze closed field

In normal diet fruit high dose showed a significant activity ($p<0.001$) when compared with control and low dose and ($p<0.01$) when compared with standard.Fruit medium dose showed a significant activity ($p<0.001$) when compared with control,standard and low dose.Fruit low dose showed a significant activity ($p<0.001$) when compared with control and standard.
In cafeteria diet fruit high dose showed a significant activity ($p<0.001$) when compared with control,low dose and medium dose and ($p<0.05$) when compared with standard.Fruit medium dose showed a significant activity

(p<0.001) when compared with control,standard and low dose.Fruit low dose showed a significant activity (p<0.001) when compared with control and standard.
In atherogenic diet fruit high dose showed a significant activity (p<0.001) when compared to control,standard,low dose and medium dose. Fruit medium dose showed a significant activity (p<0.001) when compare
d with control,standard and low dose.low dose showed a significant activity (p<0.001) when compared with control and standard

Elevated plus maze open field

In normal diet fruit high dose showed a significant activity (p<0.001) when compared with control,standard,medium dose and low dose.Fruit medium dose showed a significant activity (p<0.001) when compared with control, standard and low dose. Fruit high dose showed a significant activity (p<0.001) when compared with control and standard.
In cafeteria diet fruit high dose showed a significant activity (p<0.001) when compared with control,standard,medium dose and low dose.Fruit medium dose showed a significant activity (p<0.001) when compared with control,standard and low dose.Fruit low dose showed a significant activity (p<0.001) when compared with control and standard.
In atherogenic diet fruit high dose showed a significant activity (p<0.001) when compared to control, standard and low dose. Fruit medium dose showed a significant activity (p<0.001) when compared with control, standard and low dose. Fruit low dose showed a significant activity (p<0.001) when compared with control and standard.

Summary

- Obesity is one of the most important problems worldwide.Fig fruit *Caprificus Insectifera*in the form of dry fruit is thought to reduce body weight.Of the low,medium and high doses of fruit extract, thefruit high dose showed prominent activity. Thus, anti-obesity effects of fruitmay depend on the phytochemical constituents. The present study aimed to investigate the anti obesity effect of fig fruit on animals fed on atherogenic and cafeteria diet. The animals were divided into three major groups viz. Normal diet, Cafateria diet and Atherogenic diet. Under these groups, they were further divided into five sub-groups. The first sub-group consists of control animals and they were not treated with any drug. The second sub-group were treated with the standard drug, i.e. Ayurslim. The third, fourth and fifth sub-groups were treated with fruit extract at the dose of 100, 150 and 200 mg/kg respectively. The treatment period was 40 days.
- After 40 days, change in body weight, lipid profile and CNS activity were evaluated in all the groups and it was found that the fruit extract showed anti obesity activity by decreasing the body weight and the levels of total cholesterol,triglycerides,ldl and vldl.It also showed reduction in the level of fat in the mesenteric,uterine and kidney fat.It also showed an increase in the level of hdl.
- Thus it can be concluded that fig fruit has anti obesity activity and can be used effectively in treating obesity.

CONCLUSION

- The present study was carried out to screen the anti obesity effect of fig fruit *Caprificus insectifera* on animals fed with atherogenic and cafeteria diet.
- The acute toxicity studies concluded that the maximum safe dose is 2000mg/kg body weight.
- The ethanolic extract was administered in animals fed with cafeteria diet and they showed significant decrease of body weight,cholesterol,ldl,vldl and a significant increase in the hdl level.
- The ethanolic extract was administered in animals fed with atherogenic diet and they showed significant decrease of body weight,cholesterol,ldl,vldl and a significant increase in the hdl level.
- Thus ethanolic extract of fig fruit showed significant activity in reducing the cholesterol,triglycerides,ldlandvldl levels and also increased the level of hdl significantly.
- This contributed to the anti obesity effect of the drug which is evident from the results.
- Thus it can be concluded that fig fruits can be used therapeutically as an anti obesity agent.

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