EFFECT OF *ALOE VERA AND CINNAMOMUM TAMALA* ON BODY WEIGHT AND FEED INTAKE OF INDUCED DIABETIC MICE

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ABSTRACT: Intraperitoneal injection of alloxanmonohydrate (200mg/kg)was used to induce diabetes in mice, with blood glucose levels(fasting) morethan 150mg/dl. Sixty nine mice were divided into 4 groups, Group I was non diabetic (normal). Group II was diabetic, Group III was the diabetic and treated with *Cinnamomumtamala* and group IV was diabetic and *Aloe vera* treated. There was no increase in the blood glucoseat random and fasting in group Iwhereas, group II showed an increase in blood sugar level (91.00±2.65mg/dl to 250.00±3.79mg/dl) post 21 days. *Cinnamomumtamala* (50mg/kg) and *Aloe vera* (400mg/kg) appeared effective in reducing the blood sugar levels after 21 days treatment. There was an increase in intake of feed and drop in body weight of group II compared to group I. *Cinnamomumtamala* (50mg/kg) and *Aloe vera* (400mg/kg) was found effective regarding decrease in feed intake. Increase in weight of mice occurred treated with *Cinnamomumtamala* (50mg/kg) and *Aloe vera* (400mg/kg)as compared to diabetic mice. *Cinnamomumtamala* and *Aloe vera* were potentially efficient to treat hyperglycemia at recommended oral doses of 50 mg/kg and 400mg/kg of body weight respectively.

Key words: Alloxan Monohydrate, BGR (blood glucoserandom),BGF (blood glucose fasting), Aloe*vera* and *Cinnamomumtamala.*

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INTRODUCTION

Diabetes is one of the major causes of deaths worldwide (Can *et. al*., 2004). Diabetes causes almost 5% deaths all over the world and is currently affecting an estimated 143 million people (Mentreddy, 2007). Diabetics cannot metabolize blood sugar thus passing glucose in urine (ADA, 2012). During diabetes damage to various tissues especially pancreatic β-cells does occur (Kostaand Tiwari, 2009). Type 2 diabetes (T2D) is one of the frequently occurring types of diabetes worldwide (Wild *et. al*., 2004) and has reached to an epidemic level in Asia. Insulin resistance has increased due to obesity(Yang *et. al*., 2010). T2D leads to vascular complications accounting for morbidities and mortalities associated with the disease. A damage of 60% β-cell mass in obese humans with T2D as noted increased β-cells do increase regulation of β-cells and in this way insulin resistance is decreased. In presence of obesity replicating β-cells become vulnerable to apoptosis, thus reducing the possibility of β-cell normal mass expansion (Butler e*t. al*., 2003). It is found that anti obesity agents reduce lipid accumulation and decrease insulin resistance as well as cholesterol levels (Huang *et. al*., 2011). The relationship between obesity, hypertension and glucose intolerance is also well documented (Tan *et. al*., 2006).Sluggish lifestyle and hypertension increase the body mass index (BMI), thus aggravating obesity (Jayawardena *et. al*., 2012). Earlier studies have also shown that BMI and waist hip ratios (WHR) are alarming factors for T2D (Wei*et. al*., 2012).WHR, higher BMI and sluggish lifestyle also trigger the occurrence of diabetes (Jayawardena *et. al*., 2012).

Various chemicals are being used to treat diabetes i.e. insulin and its derivatives (Helal *et. al*., 2003)but hypoglycemic drugs that are taken orally may have side effects such as nausea, cholestatic jaundice vomiting, hemolytic anemia, hypersensitivity and dermatological reactions etc. (Rowan *et. al*., 2008). Herbal treatment has been proved an alternative treatment due to easy administration, low cost and no side-effects to other organs (Helal *et. al*., 2003).Medicines produced from plants have been a big source of diabetes treatment for long time by Indians, Chinese and even all over the world (Mentreddy, 2007).Almost 100 plants are used in India and China as medicines for the management and treatment of different ailments including diabetes (Kar *et. al*., 2003). These herbs are used for the treatment of diabetes secretion of insulin by increasing uptake of glucose. The absorption of glucose from intestine is decreased and hepatocytes reduce the energy production (Hui *et. al*., 2009).

Cinnamomumtamala is a shrub which belongs to lauraceae family. It is endemic to Southern regions of Sri Lanka and India. Its bark therapeutically affects intestines, kidney function, stomach and strengthening of the heart (Shah *et. al*., 1998).There is little information in literature about the potential anti diabetic efficacy (Kim

et. al., 2006).*Cinnamomumzeylanicum* (cinnamon) was also extensively used as customary medicine for diabetes treatment in India. The intake of *Cinnamomum* (6 grams) with rice pudding reduces the level of postprandial glucose in the blood and gastric emptying is also delayed (Hlebowicz *et. al.,* 2007).Daily intake of *Cinnamomum* (1, 3, or 6 g) decreases the level of glucose, cholesterol (LDL and HDL) and triglyceride in persons withT2D thus decreasing the risk factors linked with cardiovascular diseases (Khan *et. al*., 2003). No visible toxicity was observed by use of *Cinnamomumtamala* bark (Safdar *et. al*., 2004). *Aloe vera* extract is used to evaluate the anti-diabetic, anti-hyperlipidemic and anti-oxidative activity in control of diabetes (Mohamed, 2011). Oral intake of *Aloe vera* extract decreases the blood glucose, triacylglycerols and total cholesterol. *Aloe vera*is also found good to control obesity (Luka *et. al*., 2012). *Aloe vera* is effective to maintain blood sugar and also increase the primordial germ cells in embryos of diabetic mothers (Barmak *et. al*., 2013). A very adverse effect of diabetes is weight loss which can be improved by using *Aloe vera* extract which significantly increase weight and stored liver glycogen (Helal*et. al.,* 2003).Oral administrations of *Aloe vera* extract causes decrease in the glucose level, cholesterol and triacylglycerols even it also causes weight loss being a good treatment for obesity (Luka *et. al*., 2012).*Aloe vera* extract contains considerable amount of Zn,Mn, and Cr (Mohamed, 2011) which makes it a good agent to treat infections and healing of wound in humans (Blevins *et. al*., 2007).The study was conducted to determine antidiabetic efficacy of *Cinnamomumtamala* and *Aloevera* water extracts on alloxan induced diabetes mice.

MATERIALS AND METHODS

Efficacy of *Cinnamomumtamala* and *Aloe vera* extracts for reducing blood glucose level, body weight and feed intake in diabetic mice was evaluated.

Sample Collection: Bark of *Cinnamomumtamala* was purchased from a commercial market of Lahore, Pakistan and *Aloe vera* plant sample were collected from Government College University, Lawrence Road, Lahore, Pakistan. *Cinnamomumtamal a* and *Aloe vera* were identified by Botany Department, Government College University Lahore, with identification code, G.C. Herb. Bot\2286 and G.C. Herb. Bot\2285 for *Cinnamomumtamala* and *Aloe vera*.

Preparation of Plant Extract: Three years old *Aloe vera* leaves were washed, weighed, peeled and the leaf pulp was scratched with a spoon. The pulp was homogenized with glass homogenizer with an equal volume of phosphate buffer saline (0.1 M, pH=7). Homogenized material was stored at 4°C overnight and filtrate obtained was kept at 20°C in one ml aliquots until use (Barmak *et. al*., 2013)**.**

Cinnamomumtamala bark material was rinsed with water and shade dried. Then the bark was crushed into powder. Fifty grams of ground material soaked in 100 mL of boiled water and agitated for 24 hours. Then it was filtered to obtain the filtrate as aqueous extract. The extract was oven dried at 50°C and stored in an air tight container(Kim *et. al*., 2006).

Rearing of Albino Mice in Animal House: Albino mice were used as experimental animal; colony was reared in animal house Department of Zoology, Government College University Lahore. The experiments were designed and conducted according to ethical norms. Mice weighing 25-30 grams of 4 weeks were used for all the experiments. Mice were reared at 26±4°C, relative humidity 55-60% and light dark cycle of 12hs/ 12hs. Mice were acclimatized for a period of 07 days prior tostart of each experiment. Mice were fed on standard diet and tap water until treatment. Pelletedcommercial feed was used. Mice were kept in the standard cages (8″X18″X10″) in the group of three.

Protocol to Induce Diabetes by Alloxan Monohydrate: Diabetes was induced in mice according to Bukhari *et.al*, (2015).

Experimental Design: Sixty nine mice were divided into the following groups.

Group I. normal: Six mice were selected which were non diabetic and were used as control (normal).

Group II. Diabetic: Nine mice with diabetes induced using Alloxan Monohydrate single injection (200 mg/kg) were left without treatment of plant extract for 14 days and served as diabetic control.

Group III. Experimental group (Diabetic and *Cinnamomum* treated): Twenty seven mice with Diabetes were treated with *Cinnamomumtamala* IIIA **(**17mg/kg), IIIB (50mg/kg) and IIIC (100mg/kg) orally for14 days. The *Cinnamomumtamala* aqueous extract was administered with insulin syringe adjusted with butterfly needle through oral route to each mouse once a day for 14 days.

Group IV. Experimental group (Diabetic and *Aloe vera* treated): Twenty seven mice with Diabetes (Diabetic mice) were treated with *Aloe vera* IVA (200 mg/kg), IVB (300mg/kg) and IVC (400mg/kg)orally for two weeks (14 days). The *Aloe vera* aqueous extract was administered with insulin syringe adjusted with butterfly needle through oral route to each mouse once a day for14 days.

Blood Sugar level and Fasting Blood Glucose: Glucosure plus glucometer from Apex Bio (Taiwan) was used to check the blood sugar level and fasting blood

glucose level. Mouse tail was punctured and blood was put on the specific point of the strip of glucometer and reading was noted. Mice greater than 150mg/dl of blood glucose level both random and fasting were considered as diabetic and inducted in the study (Barmak *et. al*., 2013)**.**

Feed intake and weight of body: Feed intake and body weight of the mice were measured in all the groups. Measured quantity of pelleted diet was put into cage and at the end of 24 hours remaining quantity of feed was weighed. At the start of experiment body weight of each mice was measured and recorded for each mice (Barmak *et. al*., 2013)**.**

Statistical Analyses: The data was presented as Mean ± S.E.M. One Way Analysis of Variance (ANOVA) was performed on means to determine whether there was significant ($p < 0.05$) difference among all the groups. Tukey's multiple comparison test as post hoc was applied for inter group comparison.

RESULTS AND DISCUSSION

Evaluation of the antihyperglycemic activity of extracts of *Cinnamomumtamala* and *Aloe vera* was observed in Swiss Albino Mice (Tables 1 and 2).Single intraperitoneal injection of 0.1 ml of Alloxan Monohydrate (200 mg/kg b.w.) produced symptoms of diabetes in mice (group II) along with rise of blood glucose and fasting blood glucose level higher than 150 mg/dl from 0 to 21 days post induction which served as diabetic, which is clear indication of diabetes i. e. group II, III and IV of mice.

The Effect of *Cinnamomumtamala* on Random Blood Glucose Level and Fasting Glucose Level of Diabetic Mice: There was no increase in blood sugar level (89.67±3.48 mg/dl) during the use of *Cinnamomumtamala* from day 01 to 21 in group I (non diabetic group). Whereas, in group II (diabetic group) the increase in blood sugar level occurred (91.00±2.65 mg/dl day 01 to 250.00±3.79 mg/dl) till day 21. Diabetic mice treated with three doses of *Cinnamomumtamala*, were given to group IIIA, IIIB and IIIC indicated that there was a prominent decrease in blood sugar level in treated groups as compared to diabetic group(group II). However, *Cinnamomumtamala* (50mg/kg) was highly effective (96.00±2.00 mg/dl) in reducing blood sugar level post 14 days treatment.

There was no decrease in the fasting blood glucose from 89.67±3.48 mg/dl day 01 to post 21 days (85.33±2.03) in group I. Whereas, in group II (diabetic group) increase in fasting blood glucose occurred from 91.00±2.65 mg/dl day 0 to 253.67±2.91 mg/dl post 21 days. The result showed highly significant increase of fasting blood glucose in group II in comparison to group I (normal). Three doses of *Cinnamomum* given to group IVA, IVB and IVC indicated that there was significant reduction in fasting blood glucose in all treated groups from 01 to 14 days treatment as compared to diabetic. However, 17 mg/kg and 50 mg/kg *Cinnamomumtamala* appeared as equally effective in reducing fasting blood glucose level as compared to100 mg/kg *Cinnamomumtamala* (Table 1).

Effect of *Cinnamomum* on Feed Intake and Body Weight of Diabetic Mice: There was increase in the feed intake from 2.80±0.12 grams/24 hrs from day 01 to 3.40±0.12 grams/24 hrs post 21 days in group I (normal). Whereas, in group II the increase in feed intake occurred from 2.97±0.23 grams/24 hrs from day 0 to 6.20±0.23 grams/24 hrs post 21 days. However, mice treated with 100mg/kg of *Cinnamomum* showed comparable values of feed intake with normal group. Three doses of *Cinnamomum* given to group IIIA, IIIB and IIIC indicated that 50mg/kg dose was more effective as compared to other doses. There was an increase in the weight of mice from30.03±0.69 day 0 to 34.60±0.64 grams post 21 days in group I. Whereas, in group II (diabetic group) the decrease in body weight occurred from 30.47±0.55 to 25.27±0.78 grams during the same period of time. There was significant decrease (p value 0.00) in body weight in group II (diabetic group) as compared to group I (normal). There was significant gain of weight of mice treated with 50mg/kg of *Cinnamomum*as compared to diabetic and high dose treated mice post 21 days (Table 2).

Effect of *Aloe vera* on Blood Glucose Level and Fasting Blood Glucose of Diabetic Mice: Blood sugar level remained from 89.67±3.48 mg/dl from day 0 to 89.00±2.89 post 21 days in group I (normal) whereas, in group II the highly significant increase (p value 0.00) in blood sugar level occurred from 91.00±2.65 mg/dl from day 0 to 250.00±3.79 mg/dl post 21 days. Diabetic mice treated with three doses of *Aloe vera*, given to group IIIA, IIIB and IIIC indicated that significant reduction in blood glucose level in treated groups as compared to diabetic group. However, 400mg/kg of *Aloe vera* appeared as highly effective in reducing blood sugar level (90.33±3.53 mg/dl) post 21 days treatment. The increase in fasting blood glucose occurred for 91.00±2.65mg/dl from day 0 to 253.67±2.91mg/dl post 21 days in group II. The result indicated that there was highly significant increase (p value 0.00) in fasting blood glucose in diabetic group II as compared to normal group I. Three doses of *Aloe vera* given to group IVA, IVB and IVC indicated significant decrease in fasting blood glucose level in all groups from 14-21 days treatment as compared to diabetic mice. However, 400 mg/kg dose of *Aloe vera* was found to be more effective in reducing fasting blood glucose level compared to 200 mg/kg dose (Table 1).

Effect of *Aloe vera* on Feed Intake and Body Weight of Diabetic Mice: There was an increase in the feed intake during the use 2.80±0.12 grams of *Aloe vera*/24 hrs from day 0 to 3.40±0.12 grams/24hrs post 21 days in group I (non diabetic group). Whereas, in diabetic group the increase in feed intake occurred for 2.97±0.23 grams *Aloe vera*/24 hrs from day 0 to 6.20±0.23 grams/24hrs post 21 days. The result indicated that there was highly significant (p value 0.00) increase in feed intake in diabetic group II as compared to control group I. However, mice treated with 400mg/kg of *Aloe vera* showed comparable values of feed intake with normal group. Three doses of *Aloe vera* which were given to group IVA, IVB and IVC indicated that 400mg/kg dose was much effective as compared to 200mg/kg.

Body weight which increased by 30.03±0.69gramsfrom day 0 while using *Aloe vera*to 34.60±0.64grams post 21 days in group I (normal group). Whereas, in group II (diabetic group) the decrease in body weight occurred for30.47±0.55 to 25.27±0.78 grams *Aloe vera* during the same period of time. There was significant decrease (p value 0.00) in body weight in group II (diabetic group) as compared to group I (normal). Three doses of *Aloevera*, given to group IVA, IVB and IVC showed rise in the body weight of mice treated with400mg/kg of *Aloevera* as compared to diabetic mice post 21 days (Table 2).

Table 1. Effect of*Cinnamomum* and *Aloe vera*on Random Blood glucose level and Fasting Blood Glucose (mg/dl) in control and treated Albino mice.

Groups Experimental periods				
Blood sugar level (mg/dl)	**Day 0**	**Day 07**	**Day 14**	**Day 21**
Group I (Normal)	89.67±3.48	89.67±3.48^{a,b,c,d}	89.00±2.89^{a}	89.00±2.89^{a,b,c}
Group II (Diabetic)	91.00±2.65	223.00±7.57^{a,e,f}	224.67±6.36^{a}	250.00±3.79^{a,d,e,f}
Group IIIA (17mg/kg)	89.67±6.08	223.33±10.14^{b,e,g}	135.00±3.21^{a}	122.00±2.00^{b,d,g,h}
Group IIIB (50mg/kg)	89.33±3.53	223.33±5.49^{d,f,h}	110.00±5.77^{a}	96.00±3.46^{e,g,i}
Group IIIC (100mg/kg)	89.67±4.37	223.33±5.49^{d,f,h}	168.00±1.53^{a}	151.00±6.66^{c,f,h,i}
Group IVA (200mg/kg)	89.67±4.18	340.00±27.54b^{e}	119.00±6.08^{b}	126.00±1.15^{bdgh}
Group IVB (300mg/kg)	89.33±1.20	343.33±16.91^{c,e}	96.00±3.46^{c}	101.00±6.35^{e,g,i}
Group IVC(400mg/kg)	89.33±2.85	340.00±4.51^{d}	102.33±5.24^{d}	90.33±3.53^{c,f,h,i}
Fasting blood glucose level (mg/dl)				
Group I (Normal)	89.67±3.48	89.67±3.48^{a,b,c,d}	86.00±2.65^{a,b,c,d}	85.33±2.03^{a,b,c,d}
Group II (Diabetic)	91.00±2.65	253.00±7.57^{a,e,g}	253.00±2.89^{a,e,f,g}	253.67±2.91^{a,e,f,g}
Group IIIA(17mg/kg)	89.00±6.08	253.33±10.14^{b,e,f}	216.00±3.46^{b,e,h}	106.67±2.60^{b,e,h}
Group IIIB (50mg/kg)	89.33±3.53	253.00±6.24^{c,f}	168.33±4.10^{cf,i}	85.33±3.53^{c,f,i}
Group IIIC (100mg/kg)	90.67±4.37	253.33±5.49^{d,g,f}	193.67±1.86^{d,g,h,i}	185.00±3.61^{d,g,h,i}
Group IVA (200mg/kg)	66.00±2.52	250.00±27.5^{a,b,e}	206.00±2.5^{b,c}	159.00±1.53^{c,f}
Group IVB (300mg/kg)	68.33±1.20	253.33±16.91^{c,e}	160.33±0.88^{c}	136.67±2.19^{d,g}
Group IVC (400mg/kg)	65.33±2.85	254.00±4.51^{d}	114.33±3.84^{d}	84.00±1.00^{b,e,f,g}

Values represent Means of triplicates with Mean±S.E.M. Means with the different superscript differ significantly at $p < 0.05$. Different alphabets represent statistically significant values.

Table 2. Effect of *Cinnamomum* and *Aloe vera* on feed intake and body weight in normal, diabetic and treated groups of mice.

Groups Experimental periods				
Feed intake	**Day0**	**Day 07**	**Day 14**	**Day 21**
Group I (Normal)	2.80±0.12	2.90±0.06^{a}	3.23±0.09^{a,b}	3.40±0.12^{a}
Group II (Diabetic)	2.97±0.23	4.60±0.26	4.80±0.21^{a,c,d}	6.20±0.23^{a,b,e}
Group IIIA (17mg/kg)	3.40±0.29	4.50±0.07^{a}	4.27±0.18^{b,e}	4.60±0.29^{a,e}
Group IIIB (50mg/kg)	3.00±0.23	4.54±0.10	3.80±0.15^{c}	3.43±0.23^{b}
Group IIIC(100mg/kg)	3.40±0.23	4.53±0.23	4.00±0.23^{d,e}	3.20±0.23^{e}
Group IVA (200mg/kg)	2.80±0.06	4.53±0.03^{b}	4.07±0.12^{b,e}	3.99±0.06^{b,e}
Group IVB (300mg/kg)	2.83±0.07^{a,b}	4.53±0.09^{c,d}	4.10±0.12^{c,f}	3.79±0.13^{c,f}
Group IVC(400 mg/kg)	2.84±0.06^{b}	4.50±0.06^{de}	4.20±0.06^{dg}	3.53±0.03^{dg}
Body weight				
Group I(Normal)	30.03±0.69	32.40±0.40$_{a}$	33.57±0.48^{a}	34.60±0.64^{a}
Group II (Diabetic)	30.47±0.55	27.57±0.38^{a,b,c}	26.10±0.78^{a,b,c,d}	25.27±0.78^{a,b,c,d}

Group IIIA (17mg/kg)	30.37±0.72	30.70±0.75[b]	30.83±0.75[b]	31.07±0.78[b]
Group IIIB (50mg/kg)	30.40±0.84	30.67±0.95[c]	33.83±1.11[c]	35.53±1.80[c,e]
Group IIIC (100mg/kg)	30.37±0.55	30.33±0.41	30.37±0.52[d]	30.57±0.61[d,e]
Group IVA (200mg/kg)	30.33±0.33[b]	30.90±0.32[a,b,c]	26.20±0.38[b,c,f]	27.17±0.17[b,f,g]
Group IVB (300mg/kg)	30.33±0.33	30.17±0.32[c]	29.03±0.28[d,f]	29.93±0.28[c,d,f]
Group IVC (400mg/kg)	32.00±0.58[c]	32.50±0.50	32.50±0.26[c,e]	34.80±0.53[e,g]

Values represent Means of triplicates with Mean±S.E.M. Means with the different superscript differ significantly at $p < 0.05$. Different alphabets represent statistically significant values.

DISCUSSION

Ethno medical systems have therapeutic agents to solve the health problems. Medicinal plants with anti diabetic compound and antioxidant properties have been used to treat hyperglycemic and hypoglycemic conditions in all parts of world (Modak *et. al.,* 2007). In traditional medication diabetes was treated with physical exercise, diet and medicinal plants. More than 1200 plants were used around the world to control the diabetes and approximately 30% of the traditionally used antidiabetic plants were pharmacologically and chemically investigated (Manzoor *et. al*., 2013). The current study confirmed diabetes in mice by blood samples analysis from the tail post 07 days of alloxan induction. Blood glucose level at random 250 mg/dl and at fasting 231 mg/dl was observed post 07 days exposure (Gosh and Suryawanshi, 2001; Sarasa *et. al*., 2012; Chigozie and Chidinma, 2013 and Akuodor *et. al*., 2014) in accordance with previously reported.

Cinnamomumtamala (50 mg/kg) significantly reduced the blood sugar at random from 223.33±5.49 to 96.00±3.46 mg/dl and fasting blood glucose from 253.00±6.24 to 85.33±3.53 mg/dl post treatment. A study conducted by Chen *el. al.,* (2012) also depicted decrease of fasting blood glucose from 25mmol/L to 15mmol/L after treatment with 200mg/kg of bark extract of *Cinnamomumtamala* and *Cinnamomum cassia*. Another study conducted by Luka *et al*. (2013) revealed the decrease of 500 mg/dl to 150 mg/dl with 150 mg/kg of *Ocimumgrtissimum* extract after 14 days treatment. Diabetes was confirmed by elevated blood glucose levels at random (223.00±7.57mg/dl) and fasting (253.00±7.57 mg/dl) on 7th day of alloxan induction. *Aloe vera* with 400mg/kg significantly reduced the blood sugar at random from 243.33±16.91 to 90.33±3.53mg/dl and fasting blood glucose from 254.00±4.51 to 84.00±1.00mg/dl post 14 days treatment. *Calotropisprocera* leaves extract of 300 mg/kg decreased fasting blood glucose from 300 mg/dl to 100 mg/dl after 28 days treatment (Neto *et. al.,* 2013). Another study conducted by Helal *et. al*. (2003) revealed a decrease of 266.4±0.68 mg/dl to 139.2±0.75 mg/dl with 0.5 ml/100 gm of *Aloe vera* extract after 30 days treatment.

In the present study feed intake in grams/24 hrs in experimental mice induced with diabetes (group II) was twice in comparison to normal group I. Feed intake gradually decreased in two week time with 50 mg/kg and 100 mg/kg of *Cinnamomumtamala* indicating 50 mg/kg as effective dose for the treatment of diabetes in these mice. The same observations were also documented by Wang *et. al*., (2013) and Neto *et. al*.,(2013) using rats as experimental animals where 300-600mg/kg of *Calotropisprocera* leaves extract were effective for diabetes treatment. Feed intake was higher in diabetes induced mice 6.20±0.23grams/24 hrs than normal control (3.40±0.12 grams/24 hrs) post 21 days. However, feed intake gradually reduced in two weeks from 300 to 200 mg/kg treated with *Aloe vera*. Similar findings were reported in albino mice with plant extracts (*Musa paradisiaca* and *Cocciniaindica)* which reduced the feed intake from 31.11±2.2 grams/24 hrs to 16.1±2.1 grams/ 24 hrs) after 14 days treatment (Mallick *et. al*., 2007).

However, diabetic mice treated with *Cinnamomumtamala* showed significant change in body weight post 21 days of treatment. It was found in accordance with reports of reduction of body weight in rats and mice treated with plant extracts (Luka *et. al*., 2012). It has already been documented that 150 mg/kg of*Panax ginseng* berry extract reduced body weight of mice and effective innormoglycemic and improved glucose tolerance. Reduction in the amount of weight may be associated with the increased body metabolism on day 14.In addition body weight of diabetic mice was significantly reduced from 30.47±0.55 to 25.27±0.78 grams post 21 days induction. However, *Aloe vera* (400mg/kg) showed significant change in body weight of diabetic mice post 21 days of treatment. Decrease in the body weight of mice with the use of 400 mg/kg of *Icacinasenegalensis* was reported by Akuodor *et al*., (2014).

Conclusion: Single intraperitoneal dose of Alloxan monohydrate (200mg/kg B.W) induced diabetes in mice and initiate acute phase response which sets in diabetes thus causing change in blood glucose level. *Cinnamomum* and *Aloe vera* are potentially efficient to treat hyperglycemia at recommended oral doses of 50 mg/kg and 400mg/kg of body weight respectively.

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