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of epithelial cells. Fibrin caps were present in capillary basement membrane, segmental sclerosis, basement membrane thickening and increase mesangial matrix expantion were present in most of the sections Most tubules were atrophic Kidney section from normal rat showed normal glomeruli, renal tubules and blood vessels. **Conclusion:** Biochemical and histological studies with benazepril and telmisartan demonstrate that benazepril and telmisartan delays the progression of structural changes in the STZ diabetic kidney.

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The assessment of hypolipidaemic activity of two thiazolidin-4-one derivatives in high fat diet fed swiss albino mice

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Introduction: Research on thiazolidin-4-ones in our lab has resulted in the development of a few hypoglycaemic and anti-inflammatory molecules. Since inflammation coupled with dyslipidaemia and hyperglycaemia accelerates development of cardiovascular diseases, the current study involves the assessment of hypolipidaemic activity of two thiazolidinone derivatives, NAT3 and NAT4. **Methods:** Swiss albino mice were fed high fat diet and fructose for 20 days to induce hyperlipidaemia. Subsequently drugs were administered for 20 days while maintaining the same high-fat diet. The study groups NAT3 and NAT4 were compared with the standard nicotinic acid, hyperlipidaemic control and normal control groups. Drugs were administered in a dose of 100mg/kg. After 20 days the blood glucose and lipid levels of the groups were compared. **Results:** Twenty days of high fat diet (HFD) significantly increased body weight, serum glucose, cholesterol and triglyceride levels in mice. NAT3 significantly reduced body weight (3.42+0.93 %) and serum glucose (10.74+3.6 %) compared to HFD control. No significant difference was observed in cholesterol levels of treated and untreated hyperlipidaemic groups. Elevated serum triglyceride levels reduced significantly in NAT3 (12.3 + 7.1%), NAT4 (13.6+4.5%) and Nicotinic acid (19+6.2%) groups. **Conclusion:** It may be concluded that the NAT3 and NAT4 have modest hypolipidaemic activity. The fact that NAT3 can also reduce hyperglycaemia makes it a possible candidate for further modification to generate leads for syndrome X. The Thiazolidinone ring may have a role in these actions, through modulation of PPAR alpha or gamma. Further studies are required to confirm this hypothesis.

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Benfotiamine attenuates nicotine and uric acid-induced vascular endothelial dysfunction in rats

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The study has been designed to investigate the effect of benfotiamine, a thiamine derivative, in nicotine and uric acid-induced vascular endothelial dysfunction (VED) in rats. Nicotine (2 mg kg^{-1} day^{-1}, i.p., 4 weeks) and uric acid (150 mg kg^{-1} day^{-1}, i.p., 3 weeks) were administered to produce experimental VED. The development of VED was assessed by employing isolated aortic ring preparation and estimating serum and aortic concentration of nitrite/nitrate. Further, the integrity of vascular endothelium was assessed using the scanning electron microscopy of thoracic aorta. Moreover, the oxidative stress was assessed by estimating serum thiobarbituric acid reactive substances (TBARS) and aortic superoxide anion generation. The administration of nicotine and uric acid produced VED by impairing the integrity of vascular endothelium and subsequently decreasing serum and aortic concentration of nitrite/nitrate and attenuating acetylcholine-induced endothelium dependent relaxation. Further, nicotine and uric acid produced oxidative stress, which was assessed interms of increase in serum TBARS and aortic superoxide generation. However, treatment with benfotiamine (70 mg kg^{-1} day^{-1}, p.o.) or atorvastatin (30 mg kg^{-1} day^{-1} p.o., a standard agent) markedly prevented nicotine and uric acid-induced VED and oxidative stress by improving the integrity of vascular endothelium, increasing the concentration of serum and aortic nitrite/nitrate, enhancing the acetylcholine-induced endothelium dependent relaxation and decreasing serum TBARS and aortic superoxide anion generation. Thus, it may be concluded that benfotiamine reduces the oxidative stress and consequently improves the integrity of vascular endothelium and enhances the generation of nitric oxide to prevent nicotine and uric acid-induced experimental VED.

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To evaluate the hypolipidemic action of ethanolic extract of *Asarum canadense* on experimental animal models

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Introduction: Hypolipidemic drugs are those which lower the level of lipoprotein in blood. The plant *Asarum canadense* belongs to the family Aristolochiaceae and used in dysentery, digestive problem, cough and cold, sore throat, scarlet fever etc. it has also got antioxidant property. **Methods:** Ethanolic extract of leaves of *Asarum canadense* (EACL) was prepared by percolation method and subjected to oral toxicity testing using OECD guidelines. 30 albino rats were divided into 5 equal groups. Group 1 (normal control) received 3% gum acacia 10ml/kg/day, Group 2 (EACL) 250mg/kg/day with normal diet, group 3 received high fatty diet (vanaspati ghee and edible coconut oil 3:2) 10 ml/kg/day. Group 4 received both high fat diet and EACL 250 mg/kg/day and Group 5 (standard drug) received simvastatin 1.8 mg/kg/day. All drugs were given orally for 60 days and serum lipid parameters (Total cholesterol, Triglycerides, HDL and LDL) were estimated on 0, 30 and 60 days by drawing blood from retro-orbital sinus. Statistical analysis was done by using one way ANOVA followed by Dunnett's test. $P<0.05$ was considered of statistical significance. **Results:** There was significant ($P<0.05$) hyperlipidemia in group-3 as compare to normal control. EACL and standard drug significantly ($P<0.05$) improved serum lipid parameters as compared to group-3, although the effect of EACL was less than the standard ($P<0.05$). Group-2 showed significant hypolipidemia ($P<0.05$) compared to normal control. **Conclusion:** As revealed by the study EACL has got significant anti-hyperlipidemic and hypolipidemic actions.

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Effects of 4-(2-alkylthio -1-benzyl -5-imidazolyl –dihydropyridines on the isolated rat colon and right atrium contractility

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Dihydropyridines are known as widely used antihypertensive drugs, which exert their therapeutic effects mainly through modulation of calcium channels activity. Dihydropyridins with calcium channel blocking properties cause relaxation of smooth muscle. In order to provide a pharmacological profile for some newly synthesized dihydropyridines, we investigated their effects on the isolated rat colon segments and the isolated rat atrium contractility. The tested compounds include alkyl ester analogues of nifedipine (5a-d), in which the ortho-nitrophenyl group at position 4 is replaced by 2-methylthio-1-benzyl-5-imidazolyl substituent, and nifedipine as a positive control substance. The compounds showed similar effects to that of nifedipine on the isolated rat colon. The potency of these analogues with concentration range 10^{-5} to 10^{-4} M was much lower compared to potency of nifedipine which was effective at 10^{-8} to 10^{-5} M ($P<0.01$). However, unlike nifedipine, the test compounds exerted significant positive inotropic effect on the isolated rat atrium ($P<0.01$). Our observations suggest that these analogues of nifedipine selectively enhance contractility of heart muscle while causing relaxation of intestinal smooth muscle. These compounds may serve as valuable probes to develop novel dihydropyridines with dual smooth muscle relaxant effect and positive inotropic action in heart.

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To study hypolipidemic and antianginal effect of simvastatin in patients of coronary artery disease

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Objective: To study the effect of simvastatin in decreasing frequency of attacks of angina, in reversal of ischemic changes on ECG and on lipid profile in patients of Coronary artery disease (CAD). **Materials and Methods:** In this prospective open randomized controlled trial, 30 patients of CAD fulfilling the inclusion criteria were randomly allocated into 2 groups of 15 each. One group received conventional treatment (i.e. Nitrates, beta blockers and aspirin) and other group received simvastatin (10-20 mg) in addition to conventional treatment for 2 months. **Results:** In conventional group, mean values at baseline were triglyceride(TG) 221.33±33.35, total cholesterol(TC) 235.5±22.50, low density lipoprotein(LDL)183.67 ±20.87, high density lipoprotein(HDL) 38.14±3.6, frequency of attack of angina(FOA) 2±0.5 and after 8 weeks mean and percentage changes were TG (267±36, 21%), TC (260±17, 11%), LDL (200±14, 9%), HDL (37±2, -2%), and FOA was (2.2±0.45, 9%). In simvastatin group, mean values at baseline were TG (214±49), TC (251.8±26.30), LDL (201±29), HDL (38±3.5), FOA (2±0.65) and after 8 weeks, mean and percentage changes were TG (167±38, -22%), TC(201±13, -20%), LDL (160±14, -20%), HDL (40±3, 5%), and FOA was (1.53±0.63, -23%). E.C.G was done at each visit and no reversals of ischemic changes were seen after 8 weeks of simvastatin treatment. **Conclusion:** Lipid lowering and decrease in FOA were statistically significant in simvastatin group at 2 month. But reversal of ischemic changes on ECG was not significant. Thus simvastatin may decrease the morbidity in patients of CAD on long term use.

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Role of GLP-1 in amelioration of hyperhomocysteinemia-induced vascular endothelial dysfunction

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Objective: Glucagon like-peptide-1 (GLP-1) agonist, Exendin-4 has shown relaxant effect on rat conduit arteries in previous reports. It may be suggested that GLP-1 has role in vascular endothelial dysfunction. So, the present study had been designed to investigate the role of GLP-1 in hyperhomocysteinemia-induced vascular endothelial dysfunction in wistar rats. **Materials and Methods:** L-methionine (1.7% w/w, 4 weeks) was mixed with standard chow diet and administered to produce hyperhomocysteinemia. The vascular endothelial dysfunction was assessed by acetylcholine-induced endothelium dependent relaxations using isolated aortic ring preparation and estimation of serum concentration of nitrite/nitrate using Griess reagent. Moreover, oxidative stress was assessed by estimating serum thiobarbituric acid reactive substances (TBARS). **Results:** Administration of L-methionine resulted in significant development of hyperhomocysteinemia and vascular endothelial dysfunction was confirmed by significant attenuation of acetylcholine-induced endothelium dependent relaxations, reduced serum nitrite/nitrate concentration and increased serum TBARS as compared to sham control group. However, treatment with exendin-4 (1 microgram kg^{-1} day^{-1}) or atorvastatin (30 mg kg^{-1} day^{-1}, a standard agent) markedly ameliorated hyperhomocysteinemia-induced vascular endothelial dyfunction. **Conclusion:** It may be concluded that exendin-4 may have ameliorated hyperhomocysteinemia-induced vascular endothelial dysfuntion due to activation of GLP-1.

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Pharmacodynamic interaction of garlic with captopril in ischemia-reperfusion induced myocardial injury in rats

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Introduction: Garlic (*Allium sativum*) and its preparations have been widely recognized as agents for the prevention and treatment of cardiovascular diseases. Without scientific validation, simultaneous use of garlic with conventional antihypertensive such as captopril (CAP) is commonly observed. Hence, present investigation was undertaken to demonstrate the expected interaction of garlic homogenate (GH) with CAP during ischemia-reperfusion injury (IRI) induced damage to myocardium using isolated rat heart preparation. **Methods:** Female albino rats were treated with GH at three different doses of 125; 250 and 500 mg/kg orally for 30 days and CAP (30 mg/kg, *p.o.*) was incorporated in the interactive groups during the last seven days of GH treatment. The excised hearts were mounted on modified Langendorff setup and subjected to 15 min global no flow ischemia. Perfusates and heart tissue