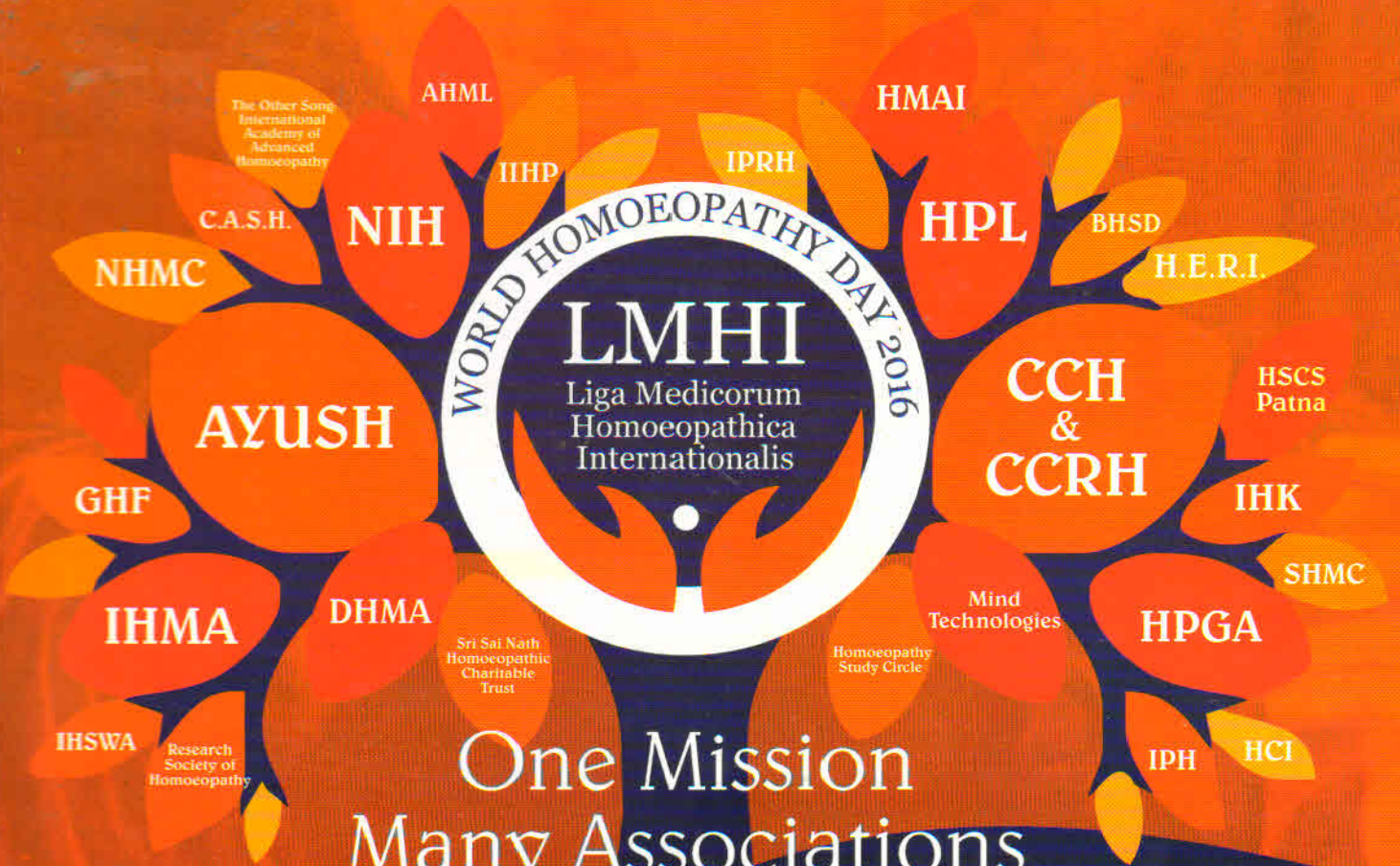




International Convention
on
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SOUVENIR

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Helping Goodness Of Homoeopathy Reach Millions

RAWALFIA SERPENTINE AMELIORATE HYPERTENSION AND OXIDATIVE STRESS PARAMETERS OF KIDNEY BY MODULATING EXPRESSION OF ANTIOXIDANT ENZYME IN DOCA-SALT INDUCED HYPERTENSIVE RAT MODEL

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Abstract

Background: Hypertension, the most common cardio-vascular disorder, is a major risk factor for the development of stroke, coronary heart disease and renal failure. It affects approximately 26% adult population worldwide as prevalence is predicted to increase by 60% in 2025. *Rawolfia serpentina* is the most widely used drug for hypertension. Its mechanism of action in alleviating its consequences remain uncertain.

Objective: To explicate the potential role of *R. serpentina* on hypertension and its serum biochemical parameters such as Sodium, Potassium, Aspartate Amino transferase, Lactate dehydrogenase, Creatine, Glucose, Oxidative stress indices and expression level of antioxidant defence enzymes in the kidney, responsible for causing hypertension or associated with it inducing hypertension male rat.

Materials and methods: Hypertension was induced in male Wistar Rat by administration of deoxycorticosterone acetate (DOCA), sodium making the rat uninephrectomised. Three control groups were also taken in the study providing food, water, ad libitum. Blood pressure was measured using tail cuff sphygmomanometer. Biochemical parameters such as Sodium (Na), Potassium (K), Chloride (Cl), Calcium (Ca), serum hepatic marker enzymes Aspartate transaminase (AST), Lactate dehydrogenase (LDH), Alkaline phosphatase (ALP), Alanine transaminase (ALT) and serum biochemical constituents such as urea, urea nitrogen, uric acid, creatine, albumin, globulin, bilirubin, total protein, glucose were measured. The animals were sacrificed and the kidney were removed. Both Mitochondrial fraction (MF) and paramitochondrial fraction (PMF) samples separated and were used to assay SOD, GPx and GST activities. Oxidative damaged products such as lipid peroxidation and protein carboxylation were estimated from MF and PMF. Isolated RNA samples from kidney tissue were used and the expression level of PCR products were estimated. Preparation of tissue homogenate and western blotting were processed to measure specific immunoreactive protein.

Statistical analysis : Results were statistically analysed by one way analysis of variance (ANOVA) followed by Fisher LSD test to find out the level of significance among the mean values. The results were considered statistically significant at a level of $P < 0.05$.

Results : Oral administration of *R. serpentina* (Q, 6C, 30C) resulted in significant reduction of systolic and diastolic blood pressure. DOCA salt treated rats should increased sodium level and decreased potassium level. Administration of *R. serpentina* decreases in sodium level and elevation of potassium.

level and serum calcium level in the experimental rats. This suggests that *R.serpentina* is beneficial for the management of serum electrolyte level which are contributing to induce hypertension. *R.serpentina* decrease the level of liver enzymes such as AST,LDH,ALP and ALT and serum glucose level in DOCA induced hypertensive rats who showed the increase of their level. There is reduction in lipid peroxidation and protein carboxyl content in uninephroctomised DOCA -salt treated rats after administration of *R.serpentina* indicates the antioxidative potential of the drug against hypertension. This study exhibited *R.serpentina* protects the Rat kidney against oxidative stress induced by DOCA -salt hypertension. Study also indicated that *R.serpentina* regulates the expression of antioxidant defence enzymes in transcript and translate levels. *R.serpentina* reduced the mRNA level and activity in mitochondrial fraction.

Conclusion : Thus *R.serpentina* has both antihypertensive and antioxidant properties as evident from considerable decrease in the blood pressure ,oxidative stress parametesr and modulation of enzymatic antioxidants in response to drug treatment. These results provide an important pharmacological basis for the use of *R.serpentina* to prevent hypertension and associative oxidative stress.

Acknowledgement : The work was generously funded by extra mural research project of central council of research in homeopathy by department of AYUSH govt of India.

THE LIFE OF CHRISTIAN SAMUEL HAHNEMANN

Leopold Drexler

Abstract

This talk portrays the most important events in the life of Christian Samuel Hahnemann (1755 - 1843), in relation to the development of homeopathy and its present-day significance.