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Promising role of novel soluble Epoxide Hydrolase inhibitors in management of Metabolic Syndrome: A preclinical study

Metabolic syndrome is a cluster of conditions including hypertension, hyperglycemia and hyperlipidemia with central obesity. Present study was aimed to evaluate the antihypertensive, antihyperlipidemic and antidiabetic potential of the selected compounds i.e BVAB-01/02 using robust models. Antihypertensive activity of test compounds was investigated using DOCA-salt (Deoxycorticosterone acetate) induced hypertensive rats. Antihyperlipidemic activity of compounds was evaluated using triton X-100 and high fat diet induced hyperlipidemia in rats. Antidiabetic potential of compounds was screened using streptozotocin and high fat diet model in rats. Oral administration of the test compounds (5 mg/kg and 10 mg/kg; BD) for six consecutive days produced significant reduction in blood pressure in DOCA-salt (Deoxycorticosterone acetate) induced hypertensive rat. Similarly, an impressive reduction in serum lipid profile (cholesterol, triglycerides and LDL) with marked elevation of HDL was recorded in triton X-100 and high fat diet induced hyperlipidemic rats. In antidiabetic study, lowering of blood glucose level was evident only at high dose in streptozotocin and high fat diet model. In addition, an impressive reduction in coronary risk index and atherogenic index was also recorded. In biochemical studies, treatment of compounds resulted in the reduction of malondialdehyde and

nitric oxide with marked elevation of superoxide dismutase and catalase enzymes level in liver, aorta and heart tissues. Histopathological study of different organs namely heart, aorta and liver clearly indicated protective roles of both compounds in different model of hypertension and hyperlipidemia. In conclusion, therapy with soluble epoxide hydrolase inhibitors (BVAB-01/02) may produce encouraging outcomes in the management of metabolic disorders. However, further study is required to confirm their efficacy at clinical level.

Speaker Biography

Swapnil Sharma is working in capacity of associate professor of Pharmacology, at Banasthali University, India. He is having more than thirteen years of experience. His core research area includes cardiovascular pharmacology, neuropharmacology and management of metabolic diseases. He is having one Indian patent to his credit. He has published more than sixty papers in journals of international repute. He is a reviewer of various peer review journals to name a few; Life Sciences, Elsevier Publisher, Journal of Alternative and Springer etc. He has also authored few books and chapters with good publishing houses. He has delivered various lectures and has been recipient of various awards in national and international conferences. He is also associated with various pharmaceutical bodies like APTI, IPA, STOX. In addition, he is also acting as CPCSEA nominee to supervise animal experimentation at different pharmacy institution in India.

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