ABSTRACT

Diabetes mellitus is a chronic disease characterized by high blood glucose levels due to deficiency in production of insulin by the pancreas or due to the insulin resistance. The number of adults with diabetes in the world will rise from 135 million in 1995 to 300 million in the year 2025. Patients with diabetes experience significant morbidity & mortality from microvascular and macrovascular complications. Diabetic nephropathy is the leading cause of ESRD in patients starting renal replacement therapy and affects approximately 40% of type 1 and type 2 diabetic patients. Synthetic and herbal drugs were tested in the present study for their efficacy in diabetic nephropathy.

The present study showed that in streptozotocin induced diabetic rats, the RAAS blockade induced by a low dose of an AT1R antagonist viz. olmesartan can be enhanced by inhibiting renin activity, through co-administration of a potent, long-lasting renin inhibitor, aliskiren which further prevents the progression of the diabetes to its complications by improving glucose sensitivity and renal parameters without affecting much of hemodynamics of the rats.

At the same time, the phytoconstituent, Garcinol was found to be efficacious in improving glucose homeostasis and metabolic profile in rat model of diabetic mellitus with the defects in insulin sensitivity and secretion. The beneficial effect of Garcinol on diabetic nephropathy is clearly associated with significant increase in the expression of nephrin, decrease in thickening of glomerular basement membrane and hence improving glomerular filtration rate.

Herbal medicines are being progressively used all over the world. Nevertheless, herbal remedies are not without hazards and several cases of adverse reactions have been described. The findings of the present investigation showed improvement of the renal variables in serum. But, the regression of histopathological observation of the kidney in the treated rat underpinned by an Iranian male patient case that lead to target specific renal damage became an eye opener. Hence, in the present it was observed that 8 week dosing of T.terrestris extract showed toxicity in kidney that is independent its antidiabetic action.

Another well marketed herbo-metallic preparation, Vasant kusumakar ras (VKR), for diabetes and its complications, undoubtedly proved to be a good therapeutic option, but in long run can prove to be disastrous because of excessive accumulation of heavy metals in kidneys owing to their long half life and hence extended elimination characteristics. Bhasmas may defy the modern definition of a medicine but its toxicity profile needs to be evaluated.