**Effect of a Dipeptidyl Peptidase-4 Inhibitor on renal function in D-galactose induced Aging in male mice : role of angiotensin II**

**Abstract,**As regarding population pyramid, we found increase life expectancy and subsequently increased proportion of elder people. Over the past 60 years, the percentage of increased elder people has been elevated from 8% to 10%**.** Aging is a gradual and biological process to which our society payed great attention**.** Aging affects homeostasis of our body system leading to cellular, molecular and physiological modulation increasing the individual susceptibility to numerous diseases such as cancers, cardiovascular and cerebrovascular diseases (CCD), Alzheimer's disease (AD) and others, which are harmful to the health of aged people. Actually, by the age of 40 year old , the glomerular filtration rate falls by 8 ml/min per 1.73 m2 every 10 years. there is also decrease in renal blood flow as well as changes in renal architecture**.** The mostbeneficial drugs in ameliorating deteriorated renal function involve angiotensin-converting enzyme inhibitors (ACEi) or angiotensin II (Ang-II) type 1 receptor (AT1R) blockers (ARB)**.** Studies showed that chronic injections of D-galactose (D-gal) can simulate the pathology of aging along with liver and kidney injury**.** D-gal is a normal reducing sugar in the body that can be metabolized into glucose at normal levels; but at high concentrations, D-gal is converted into aldose and hydroperoxides by oxidase enzyme, leading to the formation of the superoxide anion and oxygen-derived free radicals that included in the formation of advanced glycation end products (AGEs)The RAAS is a pivotal regulator of blood volume and systemic vascular resistance. Increased Ang II level plays a golden role in CKD progression**.** As angiotensin II can stimulate tubular transport, facilitate proteinuria by changing structure and function of the glomerular [ultrafiltration](https://www.sciencedirect.com/topics/medicine-and-dentistry/ultrafiltration) barrier, induce proinflammatory mediators as well as profibrogenic cytokines such as transforming growth factor-β (TGF-β). Nowadays, there are studies support the use of blockers of the RAAS to lower blood pressure, decrease proteinuria and delay the cascade of declining renal function in people with kidney disease. Dipeptidyl peptidase 4 (DPP-4) inhibitors were introduced for the treatment of type 2 diabetes in 2006. Regarding its effect on serum glucose level, DPP-4 inhibitors decrease serum glucose level by stimulate insulin secretion and inhibit glucagon secretion by elevating endogenous GLP-1 concentrations without an intrinsic hypoglycaemia risk.GLP-1 signaling mediates important renal functions, as suggested by the expression of both DPP-4 and GLP-1R in many sites in the kidney including renal blood vessels, glomerular cells and tubular cells.Nowadays, there is based data that DPP-4 inhibitors have more advantages in addition to lowering glucose levels. For example, past studies have proved prescene of renoprotective modulation in animal models, such as unilateral ureteral obstruction, partial nephroctomised rat model, ischemia-reperfusion renal injury and nephrotoxic drugs. Their renoprotective effects are mediated by the renin-angiotensin system (RAS) especially in animal models of aging-associated renal injury. Previous studies showed that plasma DPP-4 activities and DPP-4 levels in different organs became elevated as aging progressed. These changes in some organs were ameliorated by the DPP-4 inhibitors. The link between DPP-4 expression in aging kidneys and responses to DPP-4 inhibitor are still not clear and not sufficient. **Material and methods:** This work will be achieved using 35 male Albino rats, divided into 5 croups each group containing 7 rats, control group, D-galactose (D- gal) inducing group (300 mg/kg/d for 5 days D-gal I.P for 6 weeks, D- gal plus DPP4 inhibitor group, D- gal plus ARB group, D- gal plus DPP4 inhibitor plus ARB group.