Diabetic nephropathy (DN) is end stage of renal failure and mortality in diabetic individual globally. The present study was designed to evaluate the protective effect of titanium and cobalt oxide nanoparticle in the progression of DN in alloxin-induced diabetes mice. Thirty albino mice was used. . Animal were divided into 5 group (n=6). All the mice were provides normal diet and drinking water. Mice in the first group act as control group and other groups received two intraperitoneal dose of alloxin (100mg/kg) every 15 days in four week for diabetic induction. In first group, control group; did not received diabetes or any type of treatment. In second group, diabetic group; received two intraperitoneal dose of alloxin (100mg/kg). No treatment is given to this group. Blood glucose level is measured by tail blood with the help of glucometer. The blood glucose level is above 200mg/dL. In third group, diabetic+ titanium oxide; received single dose of 200mg/kg of titanium oxide nanoparticle daily via oral gavage for four week. In fourth group, diabetic+ cobalt oxide; received the single dose of 200mg/kg daily cobalt oxide nanoparticle via oral gavage for four week. In fifth group, diabetic+ glucophage; received single dose of 200mg/kg glucophage daily via oral gavage for four week. The result demonstrated that titanium oxide and cobalt oxide nanoparticle significantly ($p<0.05$) reduce serum cholesterol, triglycerides, blood urea, and serum creatinine and enhance serum albumin in mice as compared to negative group. In addition, these nanoparticle were able to prevent the histological injury in renal tissue of mice. Furthermore, significant ($p<0.05$) downregulation of expression of *TGF-β 1* were observed in treatment groups as compared to negative (diabetic group). In conclusion the titanium oxide nanoparticle and cobalt oxide have protective effect against diabetic nephropathy.