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## Olive leaves extract ameliorates streptozotocin-induced retinopathy and nephropathy in rats via an antioxidant mechanism

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Diabetes Mellitus (DM) is considered by the five causes of death worldwide. Moreover, the incidence of diabetic nephropathy (DN) and diabetic retinopathy (DR), two main chronic microvascular problems associated with prolonged hyperglycemia has risen. Olive (*Olea europaea L.*) leaves are among the herbs often used for controlling hyperglycemia in conventional medicine. The purpose of this study is to assess the effect of olive leaves extract on DM accompanied retinopathy and nephropathy. Diabetes was induced via a single injection of streptozotocin (STZ) (65 mg/kg) in rats. Three groups of diabetic rats were either treated with metformin (600 mg/kg), olive leaf extract (200 mg/kg) or (400 mg/kg). Olive leaf extract at both doses produced a significant hypoglycemic and hypolipidemic effect which was comparable to that of metformin. Olive leaf extract and metformin have improved the renal function markers and ionic electrolyte status. Furthermore, the olive leaf extract and metformin have overcome most of DM induced renal and retina histopathological changes. Olive leaf extract and metformin significantly decreased advanced glycation end products and malondialdehyde in both renal and retina tissue homogenates. Olive leaf extract and metformin significantly increased nitric oxide and superoxide dismutase in both renal and retina tissue homogenates. The result of this study concluded that olive leaf extract may exert a protective role against STZ-induced DN and DR via an antioxidant mechanism.

### Biography

Sadia Akram has completed her MPhil in Pharmacology at the age of 27 years from Khyber Medical University, Peshawar and has worked as a Clinical Pharmacist in department of Cardiology at Rehman Medical Institute from May 2013 to Dec 2017. She has recently joined Yusra Institute of Pharmaceutical Sciences as Assistant Professor Clinical Pharmacy and is also a member of Graduate Studies & Research Board.