International Journal of PharmTech Research
CODEN (USA): IJPRIF, ISSN: 0974-4304, ISSN(Online): 2455-9563
Vol.9, No.9, pp 519-533, 2016

Potential Diuretic Activity of Olive Leaf Extracts

Sahar Y. Al-Okbi[1]*, Zenab A. Hassan[2], Mohey M El-Mazar[3], Nagwa M. Ammar[4], LamiaT. Abou El-Kassem[4] and Hagar F. El-Bakry[1]

[1]Food Sciences and Nutrition Department, National Research Centre, Cairo, Egypt
[2]Biochemistry Department, Faculty of Pharmacy, Helwan University, Egypt
[3]Faculty of Pharmacy, The British University of Egypt, Egypt
[4]Pharmacognosy Department, National Research Centre, Cairo, Egypt

Abstract : The aim of the present research was to study the diuretic effect of petroleum ether and aqueous methanol extract of olive leaves in rats in 3 different doses. The diuretic effect of co-administration of vitamin C with aqueous methanol olive leaf extract was assessed. The mechanism of the diuretic activity was studied through determination of saluretic, natriuretic and carbonic anhydrase inhibition indices, as well as glomerular and tubular functions in experimental model of lithium. Phytochemical analysis of aqueous methanol extract was assessed using chromatographic technique, UV and NMR spectroscopy. K/Na ratio was determined in olive leaf and its aqueous methanol extract. **Results**: The tested extracts showed diuretic activity in all the studied doses compared to control with different degrees and variation in saluretic effect. Co-administration of vitamin C with olive leaves aqueous methanol extract enhanced its diuretic effect. Urinary electrolytes produced by rats given olive leaf extracts were significantly lower than that of furosemide but significantly higher than control. Significant increase in creatinine clearance in rats given olive leaf extracts was noticed compared to control in lithium model. K/Na ratio was high in olive leaf and its aqueous methanol extract. Flavonoid compounds represented by luteolin, apigenin and apigenin 7-O-β-D-neohesperopyranoside were identified in olive methanol extract. ***Conclusion:*** Olive leaf extracts showed diuretic activity. Vitamin C had synergistic diuretic action with aqueous methanol extract. The diuretic activity of aqueous methanol extract may be attributed to the presence of vitamin C, flavonoids, and the high K/Na ratio that were identified in the plant.
Keywords : Olive leaf extracts, flavonoids, diuretic effect, vitamin C, mechanism of action, rats, safety.

*****