

Is phytotherapy effective for the urinary dysfunction in patients with benign prostatic hypertrophy ?

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Plant extracts are widely used for the treatment of benign prostatic hyperplasia (BPH) and related lower urinary tract symptoms. In fact, phytotherapeutic agents, including Saw palmetto extract (SPE), are very popular in many European countries as herbal remedies represent up to 80% of all drugs prescribed for these disorders. Numerous pharmacodynamic mechanisms of SPE have been proposed, including inhibition of 5 α -reductase, anti-androgenic effects, anti-proliferative effects, anti-inflammatory effects and anti-edema effects. Our previous studies have shown that SPE may improve lower urinary tract symptoms by acting on pharmacologically relevant receptors (α_1 -adrenergic, muscarinic and 1,4-dihydropyridine calcium channel antagonist receptors) in the prostate and bladder of rats and human (Oki, et al, *J. Urol.*, 173: 1395, 2005; Suzuki et al, *Urology*, 69: 1216, 2007). To identify active constituents in SPE, *n*-hexane and diethyl ether extracts of SPE were fractioned by silicagel column chromatography followed by reversed-phase HPLC. The fractions containing lauric acid and oleic acid, which are major constituents in SPE, displayed significant binding activity of muscarinic, α_1 -adrenergic and 1,4-dihydropyridine receptors, suggesting that these fatty acids are major principles for pharmacodynamic effects of SPE. Commercially available agents of lauric acid and oleic acid also exerted similar binding activities of these receptors as the fatty acids fractioned from SPE. Plasma concentrations of lauric acid and oleic acid after single oral administration of SPE in rats were determined by using LC-MS. The plasma concentrations of both fatty acids reached maximum levels at 3 hr after single oral administration of SPE at 600 mg/kg. Further, clinical study has shown that repeated administration of SPE in patients with BPH receiving long-term therapy with α_1 -blockers improved significantly residual urine. Thus, the present study suggests that SPE is effective for the urinary dysfunction in patients with BPH.