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Plant extracts alleviate urinary dysfunction in patients with benign prostatic hyperplasia and overactive bladder

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Lower Urinary Tract Symptoms (LUTS) caused by Benign Prostatic Hyperplasia (BPH), overactive bladder (OAB) and Interstitial Cystitis (IC) are very common urinary disorders in geriatric population. In addition to the currently available medical therapy such as α^1-blockers and antimuscarinic agents, in many European countries, phytotherapeutic agents such as Saw Palmetto Extract (SPE) are widely used for the treatment of BPH and these herbal remedies represent up to 80% of all drugs prescribed for these disorders. Some clinical trials support efficacy of SPE in improving LUTS associated with BPH. Here, I will present some basic and clinical evidences for the effectiveness of some plant extracts in the alleviation of LUTS. The intraduodenally administered SPE improved significantly urodynamic symptoms in hyperactive bladder of rats by increasing bladder capacity and prolonging micturition interval. SPE exerted binding activities of pharmacological receptors such as α^1-adrenergic and muscarinic receptors in the prostate and bladder of rats and human, in the concentration dependent manner. The repeated intake of SPE caused an additive improvement of urinary parameters in patients with BPH taking α^1-blocker. *Peucedanum Japonicum* (PJ) is one of Umbelliferae plants, inhabited at southern parts of Japan (Kyusyu, Okinawa and Yakushima islands). Its pharmacologically active constituent (isosamidin) exerted a concentration-dependent inhibition of agonists-stimulated contraction of isolated strips of rabbit bladder and prostate. Furthermore, PJ extract improved significantly urodynamic symptoms in hyperactive rat bladders by decreasing the micturition frequency. Repeated oral administration of PJ extract improved significantly urodynamic parameters in female patients with OAB. Nobiletin is a polymethoxy flavonoid abundantly present in Citrus fruits, including shekwasha (*Citrus depressa*) produced in southern parts of Japan. Single oral administration of a shekwasha extract containing nobiletin and tangeretin alleviated significantly urodynamic symptoms in hyperactive rat bladder by prolonging the micturition interval and decreasing micturition frequency. The potency of binding to bladder muscarinic receptors by nobiletin may be partly contributed to the beneficial effect. Thus, the current results may support the clinical usefulness of plant extracts in the treatment of LUTS.

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