Spices Can Affect Bladder Sensation and Muscle Contractility in Different Ways

Introduction and Objective: To investigate the possible effects of spices on overactive bladder (OAB). The relationship between spicy food and OAB is not clear. Epidemiological studies had referred spices as a risk factor of OAB, but there were no animal or clinical research supporting this. We studied the effects of spices on inducing overactive bladder in rats.
Materials and Methods: Three different spices, including benzyl isothiocyanate (BI) and curcumin, were used to induce overactive bladder. Intravesical pressure and intercontraction interval were compared before and after spice instillation. Muscle strips of rat bladder were examined under electric field stimulation. Spices alone, or along with succinylcholine were added in organ chamber to evaluate muscle strips contractility. Masson's trichrome stain, hemotoxylin & eosin, and alcian blue stain were used to evaluate bladder wall in chronic use of spices.
Results: Curcumin is most active spice in bladder function due to its water solubility. It may decrease ICI by 63.5 ± 28.1 % and increase muscle strip contractility by 117.3 ± 2.1%. BI may decrease muscle strip contractility, but failed to demonstrate changes in ICI. Succinylcholine added may counteract with contractility increase by curcumin. The decrease of contractility by BI is not changed by succinylcholine.
Conclusions: We demonstrated for the first time that spices are potentially active in changing bladder function. Though different spices works differently, the major cause may be their water solubility. The mechanisms of spice-induced overactive bladder shall be further investigated.