

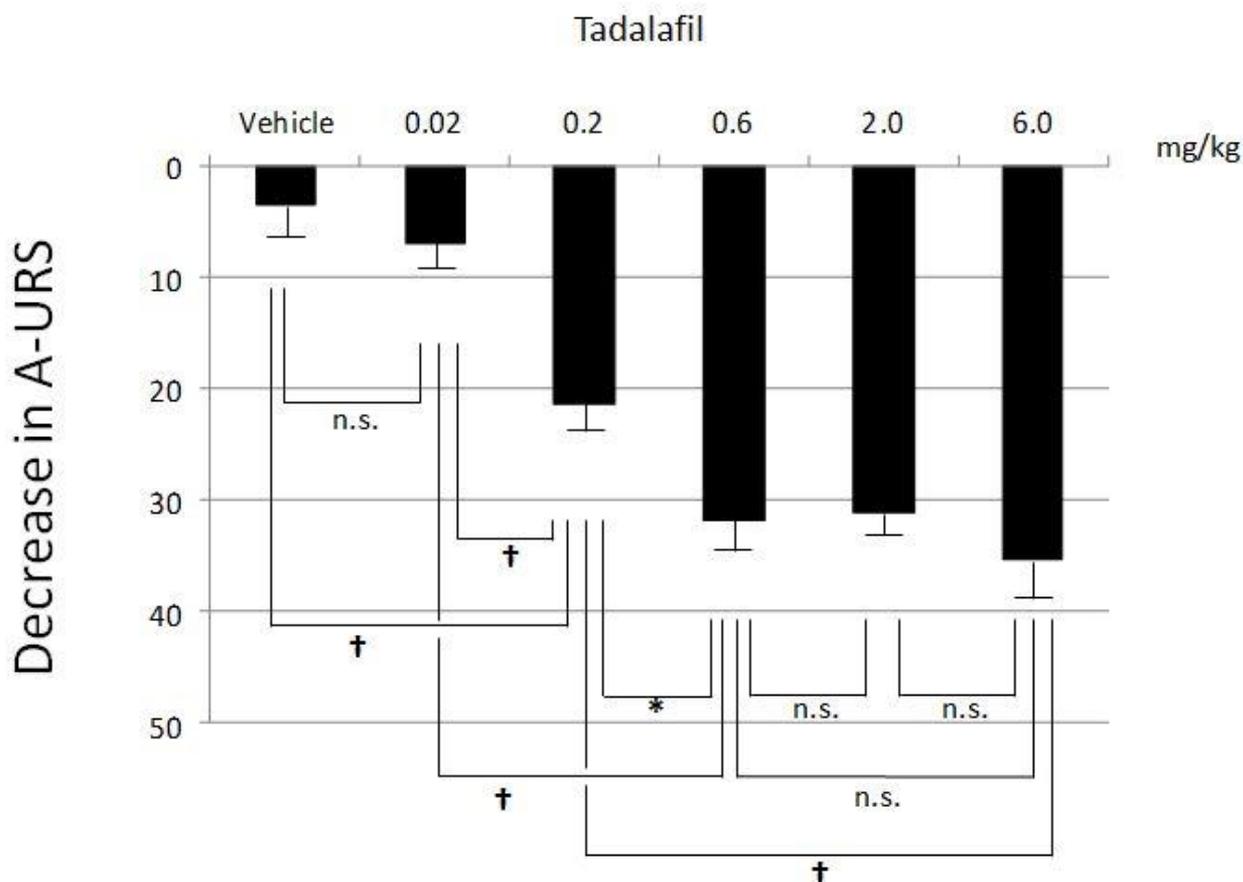
EFFECTS OF PHOSPHODIESTERASE TYPE 5 INHIBITOR, TADALAFIL, ON CONTINENCE REFLEX IN RATS

Hypothesis / aims of study

Effects of tadalafil, a phosphodiesterase type 5 inhibitor, on the urethral continence reflex induced by sneezing were investigated.

Study design, materials and methods

The amplitude of urethral pressure responses during sneezing (A-URS) and urethral baseline pressure (UBP) were measured in female rats using a microtransducer-tipped catheter. Sneezle leak point pressure (S-LPP), defined as the lowest amount of pressure required to induce fluid leakage from the urethral orifice during sneezing, was measured in rats with stress urinary incontinence induced by vaginal distension. Values were determined before and after tadalafil administration. The study was approved by our Institutional Animal Care Committee



Results

Tadalafil dose-dependently and significantly decreased A-URS and S-LPP. At the highest dose tested (6.0 mg/kg), A-URS and S-LPP decreased from 49.7 to 32.3 and from 63.9 to 44.2 cm H₂O, respectively, whereas UBP did not significantly change.

Interpretation of results

The effect of a PDE5i on the urethral continence reflex induced by sneezing was investigated in rats. The A-URS and S-LPP were significantly decreased by tadalafil, whereas UBP was not significantly changed. These results indicate that PDE5i attenuates the urethral continence reflex induced by sneezing in this rat model mainly by relaxing striated muscles of the external urethral sphincter, resulting in stress urinary incontinence deterioration. Because SUI deterioration in humans might also be induced by PDE5i, further investigations are warranted regarding the potential impact of PDE5i on SUI in the clinical setting.

Concluding message

Tadalafil attenuated the sneeze-induced urethral continence reflex by relaxing the striated muscles of the external urethral sphincter.

Disclosures

Funding: NONE **Clinical Trial:** No **Subjects:** ANIMAL **Species:** NONE **Ethics Committee:** Tohoku University Graduate School of Institutional Animal Care Committee