The present study shows that chronic bladder inflammation results in mechanical allodynia in the lower abdomen, evidenced by reduced mechanical sensitivity. Treatment with k252a, TrkA Ig2 or TrkB Ig2 improved mechanical threshold of the abdomen registered (in grams) were 60.0±0.0, 51.5±17, and 34.0±17 at time points 4h, 24h and 48h post-Cyp injection, respectively. Likewise, BDNF sequestration with TrkB-Ig2 also improved the mechanical hypersensitivity of the lower abdomen when compared with intrathecal saline (p<0.01). In this case, the mechanical thresholds observed were 80.0±23.0 (4h), 68.8±40.5 (24h) and 23.3±5.5 (48h).

Bladder reflex activity was strongly increased in animals treated with cyclophosphamide, from 0.5±0.1 to 1.0±0.4 (p<0.01). Intrathecal saline did not alter this frequency. Intrathecal delivery of k252a dose-dependently reduced bladder frequency to 0.4±0.3 after the highest dose (6 ug). In animals receiving TrkA-Ig2 the frequency of bladder contractions was reduced to 0.7±0.3. Treatment with TrkB-Ig2 significantly reduced bladder frequency to 0.4±0.01 (p<0.05).

**Interpretation of results**

The present study shows that chronic bladder inflammation results in mechanical allodynia in the lower abdomen, evidenced by reduced mechanical sensitivity. Treatment with k252a, TrkA Ig2 or TrkB Ig2 improved mechanical threshold of the abdominal region. Bladder reflex activity caused by cystitis was also reduced by the same treatments. These results support a role for chronic bladder inflammation.

**Concluding message**

Our results indicate that NGF and BDNF are important mediators for development of pain and urinary frequency in animals with chronic bladder inflammation. It is likely that Trk antagonists or neurotrophin sequestering proteins may be useful treatments in the future.