Abstract  BACKGROUND:

We aimed to determine the sympatholytic and clinical effects of low dose high frequency ultrasound (US) applied on stellate ganglion in Complex Regional Pain Syndrome (CRPS) type I patients.

MATERIAL AND METHOD:

Fourty-five patients with CRPS type I were randomly allocated into three groups. Pharmacological treatment, transcutaneous electrical nerve stimulation (TENS), contrast bath and exercise were applied to all groups for 20 sessions. In addition to this treatment protocol, low dose high frequency US was applied on stellate ganglion as 0.5 watts/cm(2) in group I; 3 watts/cm(2) in group II and as placebo in group III. Forty age and sex matched healthy controls were served as controls. Sympathetic skin response (SSR) was used for determining the sympatholytic effects of US. Pain was assessed with visual analog scale (VAS), limitation of total finger flexion was assessed with finger pulp-distal crease distance, muscle strength was assessed with measuring the grip strength, upper extremity disability was assessed with Disability of the Arm, Shoulder and Hand (DASH) scale before and after the treatment.

RESULTS:

All groups evalueted in terms of VAS score, finger pulp-distal crease distance, grip strength and DASH score after the treatment. The improvements in those parameters were not statistically significant between the groups (P > 0.05). SSR latency was significantly shorter in CRPS patients than controls (P < 0.05). Pre- and post-treatment SSR amplitude and latency values were not different within patient groups (P > 0.05). The differences in pre- and post-treatment SSR amplitude and latency values were not statistically different between patient groups (P > 0.05).

CONCLUSION:

Low dose high frequency US applied on stellate ganglion did not make a sympathetic blockade and was not of further benefit for pain, range of motion, grip strength and upper extremity disability in CRPS type I patients.