

## Quantitative three-phase bone scintigraphy in the evaluation of intravenous regional blockade treatment in patients with stage-I reflex sympathetic dystrophy of upper extremity

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**Objective:** To investigate the role of quantitative three phase bone scintigraphy (QTPBS) in the evaluation of efficacy of intravenous regional blockade treatment in patients having reflex sympathetic dystrophy (RSD) of the upper extremity. **Material and Methods:** Twenty-six patients with stage-I RSD were focused on in this study. Patients were treated with physical therapy and intravenous (I.V.) regional blockade therapy consisting of dexamethasone and lidocaine. All patients were clinically evaluated before and 1 month after the completion of the therapy protocol. QTPBS was applied to patients before therapy and 1 month after the therapy. As a control group, 11 healthy subjects also underwent QTPBS. Perfusion, hyperemic and fixation indices were calculated from three-phase bone scintigraphy. **Results:** All patients showed statistically significant clinical improvement after the therapy ( $p < 0.01$ ). Pre-treatment, perfusion ( $1.67 \pm 0.63$ ), hyperemic ( $1.44 \pm 0.48$ ) and fixation ( $1.69 \pm 0.48$ ) indices of patients were higher than those of healthy subjects (PI:  $0.95 \pm 0.05$ , HI:  $0.94 \pm 0.06$ , FI:  $1.01 \pm 0.2$ ) ( $p < 0.01$ ) and all indices significantly decreased after the treatment (PI:  $1.33 \pm 0.46$ , HI:  $1.18 \pm 0.23$ , FI:  $1.42 \pm 0.26$ ) ( $p < 0.01$ ). **Conclusion:** I.V. regional blockade therapy combined with corticosteroids is a simple, safe and effective method for the treatment of patients with stage-I RSD in the upper extremity. QTPBS is a valuable and objective method to evaluate the response to therapy and may be useful for staging of patients and predicting the response to therapy.

**Key words:** quantitative bone scintigraphy, reflex sympathetic dystrophy, blockade therapy, response evaluation