Perfusion Index is Increased in Acute Complex Regional Pain Syndrome Type 1

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Abstract

Objectives: This study aims to investigate whether perfusion index (PI) changes in the affected extremity of complex regional pain syndrome (CRPS) patients compared to other extremities, and define the possible value of this noninvasive method in evaluating CRPS patients' peripheral perfusion.

Patients and methods: Twenty-five CRPS type 1 patients (17 males, 8 females; mean age 37.9±15.1 years; range 20 to 53 years) who fulfilled the Budapest criteria and 22 age, sex and body mass index matched healthy controls from the staff of our hospital were enrolled. The patients and controls were laid in supine position with the palms facing upward. A pulse oximeter sensor was first attached to the fourth finger of the hand with CPRS, and then to the fourth finger of the unaffected hand. PI values were recorded at five minutes after the attachment of the probe. The control group underwent the same procedure for both extremities.

Results: PI values were significantly different between healthy and affected hands of the patients ($p=0.007$). PI values did not show a significant difference between the left and right hands of the subjects in the control group ($p>0.05$).

Conclusion: This study suggests that peripheral PI of the extremities of early stage CRPS type 1 patients may be useful in the diagnosis process.