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Proinflammatory cytokines and high sensitivity C-reactive protein to monitor disease activity in acute Charcot feet

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Acute Charcot osteoarthropathy is difficult to monitor when the opposite foot is also a Charcot foot as current clinical methods rely on comparison of skin temperature between both feet. We report a 53 year old lady who presented with bilateral redness and swelling of her feet indicative of Charcot osteoarthropathy. Foot X-rays confirmed bilateral Lisfranc metatarsal/tarsal dislocation. Mean skin temperature of the right foot was $32.9 \pm 0.9^{\circ}\text{C}$ and of the left foot was $33.1 \pm 0.8^{\circ}\text{C}$. High-sensitivity C-reactive protein (hsCRP) was only mildly raised at 7.6 mg/l. However, serum interleukin-6 (IL-6) was greater than 10.00 pg/ml, IL-1beta was 0.63 pg/ml and TNF-alpha was 1.03 pg/ml. She was fitted with modifiable pressure relieving walkers. Four weeks later foot skin temperatures were similar; the right was $32.9 \pm 0.4^{\circ}\text{C}$ and the left was $32.7 \pm 0.8^{\circ}\text{C}$. However, serum IL-6 had fallen to 5.35 pg/ml, IL-1beta had fallen to 0.29 pg/ml and TNF-alpha had fallen to 0.84 pg/ml. Serum hsCRP had also decreased to 3.6 mg/l. She was reviewed 4 week later. Foot radiographs now indicated bilateral sclerosis and consolidation. Foot skin temperatures were $31.9 \pm 0.2^{\circ}\text{C}$ on the right and $31.7 \pm 0.7^{\circ}\text{C}$ on the left. Serum IL-6 levels had now fallen from initially greater than 10.00 to 3.67 pg/ml, also IL-1beta had fallen from 0.63 to 0.17pg/ml and TNF-alpha from 1.03 to 0.61pg/ml. Similarly, serum hsCRP levels had fallen from 7.6 mg/l to 2.5 mg/l. This case report indicates the possible role of proinflammatory cytokines as well as hsCRP in monitoring disease activity in acute Charcot feet.