

**Calciphylaxis in the current era: emerging 'ironic' features?
Nephrol Dial Transplant. 2010 Jul 12
Farah M,**

Abstract

BACKGROUND: Calcific uraemic arteriopathy (CUA), previously known as calciphylaxis, is a condition of microvascular calcification and thrombosis with resultant tissue necrosis.

Due to the rarity of this disease, our understanding of its pathogenesis remains speculative. Iron has emerged as a potential pathogenic contributor to the development of CUA, but investigation into this link is lacking. The purpose of our study was to explore the clinical characteristics of patients diagnosed with CUA at our institution to allow for comparison to available literature. In addition, we wanted to pursue the possibility of iron being a pathogenic contributor to CUA development.

We hypothesized that iron would have to be present in areas of microvascular calcification in order to play a contributing pathogenic role and, therefore, wished to establish whether iron deposition was present within available diagnostic CUA skin biopsy specimens.

METHODS: This study included all patients diagnosed with CUA at our institution between 1997 and 2009 whose tissue was available for further analysis. All available diagnostic skin biopsy specimens were reviewed and further analysed by a dermatopathologist. As the goal was to explore the potential pathogenic role of iron, staining for iron deposition within biopsy specimens was undertaken. All available medical and biochemical information about patients was also collated for analytic purposes and related to the biopsy specimen findings.

RESULTS: Tissue blocks from 12 patients diagnosed with CUA at our institution were available for further analysis. In this CUA cohort, the average age at diagnosis was 61 years (range, 36-83 years), with six (50%) patients being female. Of these patients, 8 (67%) had diabetes, 8 (67%) had coronary artery disease and 10 (83%) had dyslipidaemia.

At the time of diagnosis, eight (67%) were on peritoneal dialysis, two (17%) on haemodialysis and two (17%) were pre-dialysis. Our patients had short dialysis vintage times prior to diagnosis (average, 2.1 years).

Iron deposition was detected in areas of microvascular calcification in all diagnostic specimens and was absent in unaffected microvasculature within the same biopsy specimens.

CONCLUSIONS: The findings of iron deposition in affected microvasculature lend support to the potential role of iron in the complex pathophysiologic cascade of CUA. The implications for iron therapy in high-risk patients and the possible rationale for the use of sodium thiosulphate, a metal chelator, in the treatment of CUA are explored