

## Abstract

This retrospective study investigated whether necrotic lesions detected on a computed tomography (CT) scan are more regressive than non-necrotic lesions after methotrexate withdrawal in patients pathologically diagnosed with methotrexate-associated lymphoproliferative disorders (MTX-LPD). In total, 89 lesions extracted from 24 patients on CT scans were included in the analysis. All patients had been evaluated for the presence of necrosis within lesions via CT scan upon first suspicion of MTX-LPD (baseline CT scan). The percentage lesion size reduction between the baseline and initial follow-up CT scan was calculated. The association between necrosis within lesions and size changes was estimated via linear regression analyses using both crude and adjusted models. Necrosis was significantly more common in extranodal lesions (27 out of 30 lesions, 90%) than in nodal lesions (9 out of 59 lesions, 15%,  $p < 0.001$ ). In the crude model, the regression of necrotic lesions was 58.5% greater than that of non-necrotic lesions; the difference was statistically significant ( $p < 0.001$ ). Additionally, the longest diameter of necrotic lesions at the baseline CT scan was significantly greater than that of non-necrotic lesions ( $p < 0.001$ ). Based on the adjusted model, necrotic

lesions showed 49.3% greater regression than non-necrotic lesions ( $p = 0.017$ ). Necrosis detected on a CT scan was found to be an independent predictor of regression after MTX withdrawal in patients with MTX-LPD.