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**MYOCARDIAL FAT DEPOSITION IN DILATED CARDIOMYOPATHY—ASSESSMENT BY USING MR WATER-FAT SEPARATION IMAGING**

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**Objectives** To prospectively investigate the prevalence of fat deposition in dilated cardiomyopathy (DCM) by fat-water separation imaging. An auxiliary aim was to determine the relationship between LV fat deposition and characteristic myocardial fibrosis, as well as cardiac functional parameters.

**Methods** Forty-eight patients with DCM were scanned on a 1.5 T MR scanner (MAGNETOM Avanto, Siemens, Germany) after written informed consent was obtained. The MR scan protocols included a series of short-axis LV cine imaging for functional analysis, fat-water separation imaging using VARPRO, and late gadolinium enhanced (LGE) imaging for fibrosis. Fat-water separation imaging was covered the entire LV myocardium. Fat deposition and fibrosis location were compared to the scar regions on LGE images using 17-segment model. Statistical comparisons of LV global functional parameters, fibrosis volumes, and fat deposition were carried out using the Pearson correlation, student t test and multiple regressions.

**Results** A fat deposition prevalence of 29.2% (14/48) was found in areas of DCM. The patients with fat deposition had larger myocardial fibrosis ( $27.0 \pm 15.1 \text{ cm}^3$  vs  $12.8 \pm 6.1 \text{ cm}^3$ ;  $p < 0.01$ ), larger LVEDV ( $267.8 \pm 48.8 \text{ ml}$  vs  $201.6 \pm 46.5$ ,  $p < 0.01$ ) and decreased LV ejection fraction ( $19.5\% \pm 8.4$  vs  $29.0\% \pm 12.1$ ;  $p < 0.01$ ). The volume of fat deposition was correlated with scar volume, LV ejection fraction, LV end-diastolic volume index, and LV end-systolic volume index.

**Conclusions** Fat deposition is quite a common phenomenon in DCM. And it is associated with DCM characteristics such as fibrosis volume and LV function.