

ACUTE LESION VOLUME PREDICTS CHRONIC VOLUME REGARDLESS OF ABLATION PARAMETERS, ENERGY SOURCE OR ABLATION LOCATION

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BACKGROUND

Imaging-guided cardiac ablation (CA) has allowed the visualization acute lesion volume. However, lesion volume tends to decrease with time. The aim of this study is to determine whether acute lesion size can predict chronic lesion size.

METHODS

Fifty-Three ventricular lesions were created on porcine models using either radiofrequency (RF) ablation or cryoballoon ablation. Multiple ablation parameters were used, and both connected and unconnected lesions were obtained. A late gadolinium enhanced MRI (LGE-MRI) was obtained in the first hour following ablation and a second LGE-MRI was obtained 47 to 77 days later. Lesion segmentations and size calculations were performed with Corview software.

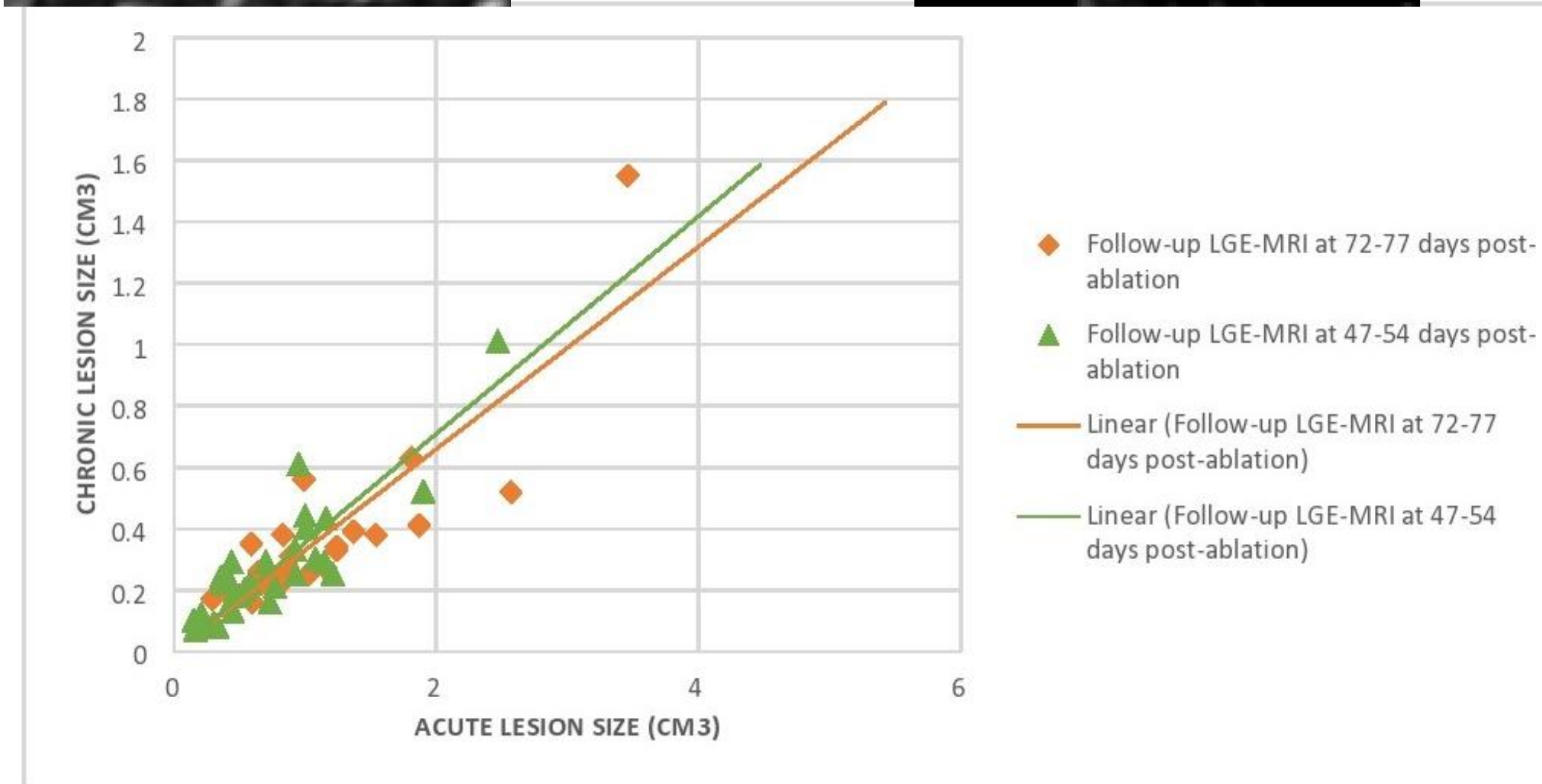
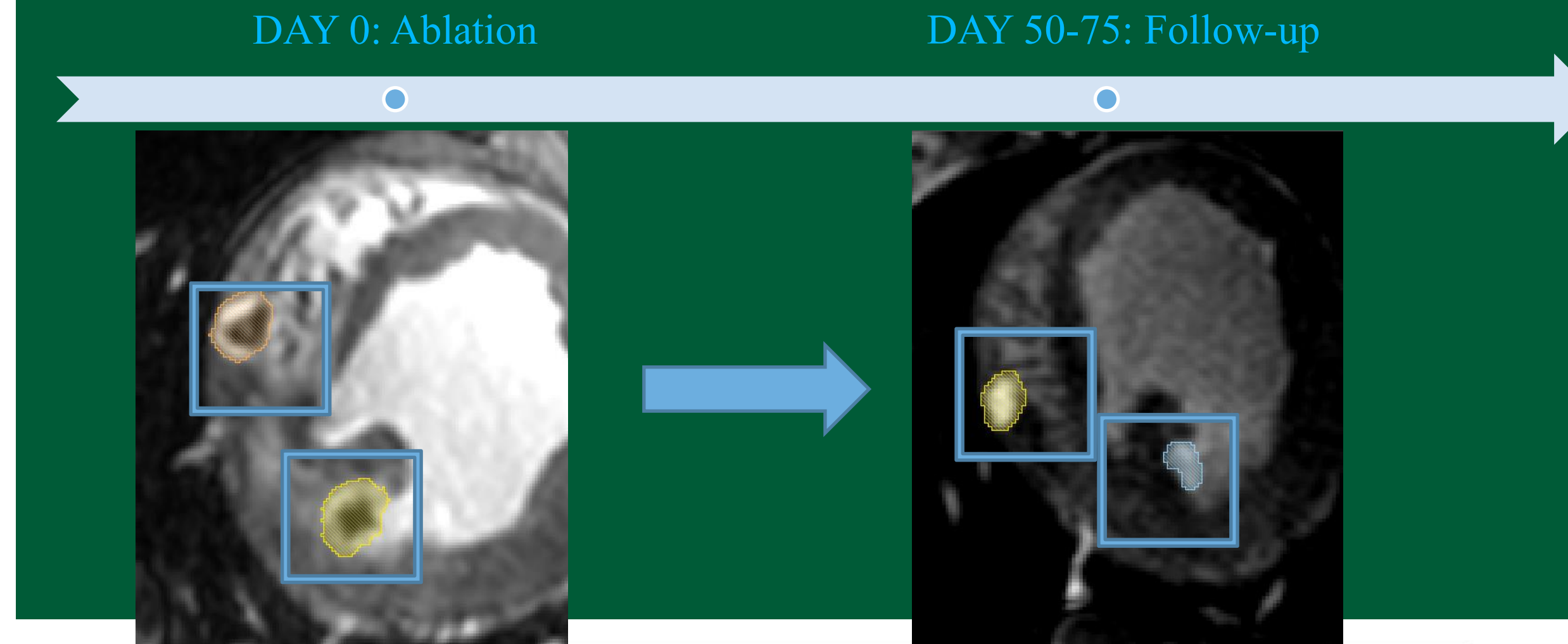
RESULTS

Out of the 53 lesions, 24 were created in the left ventricle (LV) free wall, 16 in the right ventricle (RV) free wall and 16 in the septum. All lesions created were smaller in the chronic settings. Lesion size progression seems to follow a linear trend. After 47-54 days, chronic lesions volumes (cm³) are about 0.3553 their corresponding acute volumes (cm³) (R²=0.7615). Similarly, after 72-77 days, chronic lesions volumes (cm³) are about 0.3293 their corresponding acute volumes (cm³) (R²=0.7347). This trend is observed regardless of ablation method, parameters, in both LV and RV free walls, septum, and whether lesions are connected or unconnected.

CONCLUSION

Regardless of energy source, ablation parameters or location, cardiac ablation lesions became smaller with time following a predictable, linear trend.

All Lesions Follow The Same Trend: Chronic Volume = 0.34 * Acute Volume



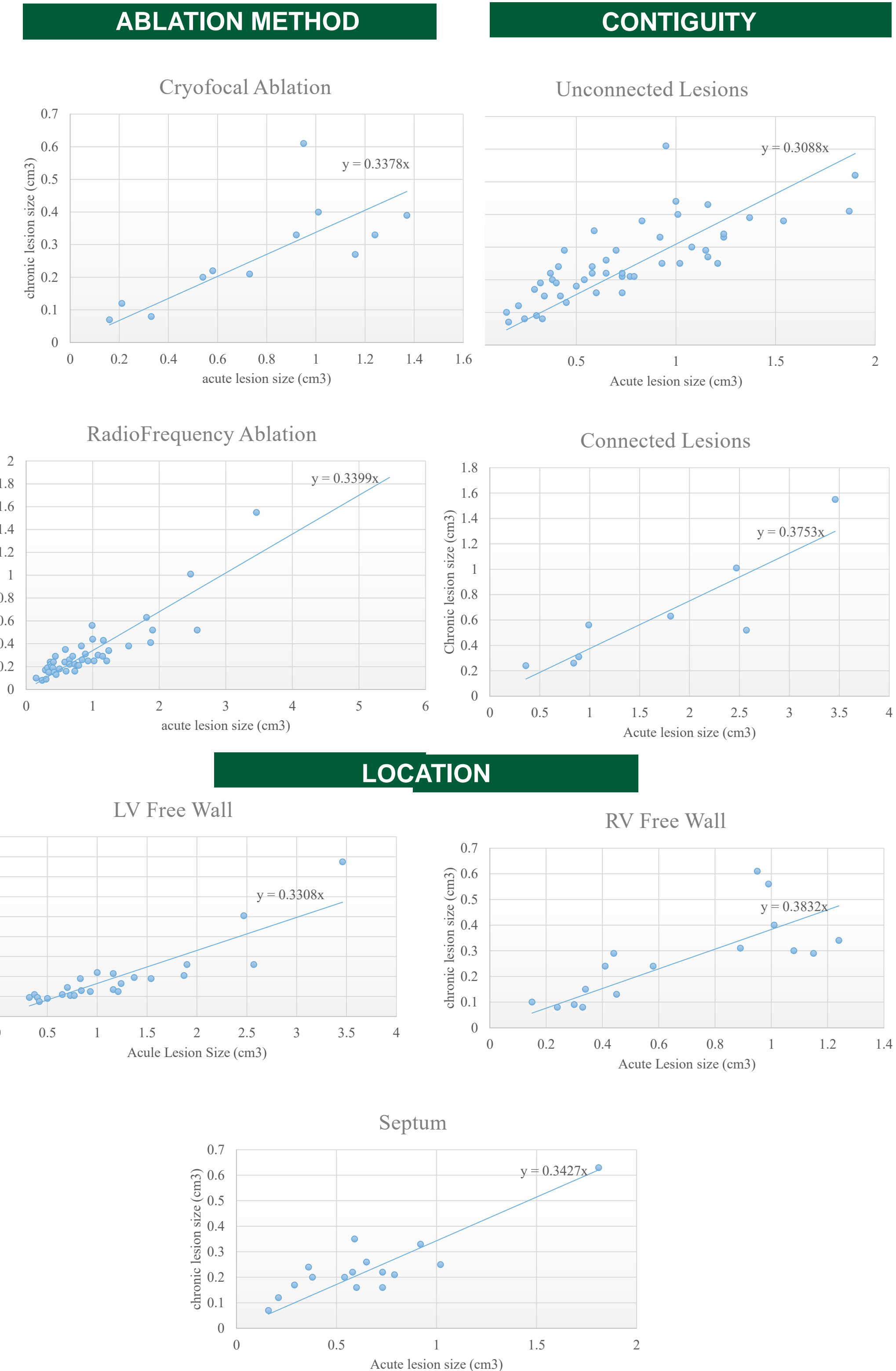
Scatter Plot Showing Chronic Lesion Volume Compares to Acute Lesion Volume in 2 Different Follow-up Group



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All Lesions Follow The Same Trend Regardless ...



DISCLOSURE INFORMATION

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