with increasing mean heart dose, however, it is unknown how this will influence the risk of LCT. Risk of LCT is known to increase with increasing mean heart dose, however, it is unknown whether evaluating dose to coronary arteries, such as the coronary arteries, will provide additional information to predict LCT risk. This study evaluated whether estimating dose to coronary arteries (CA) provided additional explanatory information for LCT compared to estimating whole heart dose alone.

Methods and Materials: LCT status of 599 patients receiving mediastinal RT for HL at a tertiary cancer centre between 1988-2003 was determined from medical records and with linkage to a population-based hospitalization dataset. A random sample of 125 of these patients was selected and bi-annual imaging of heart volumes from 2D imaging was used as a surrogate for heart dose. Historical RT plans were reconstructed on the 3D CT data sets and the heart and coronary arteries were contoured to estimate dose-volume variables to these structures. Principal Component analysis (PCA) was used to compare the proportion of variation in LCT explained by dose-volume variables to the heart plus the heart plus CA. The contribution (loadings) of different parameters (Dmean, Dmax, Dmin, V5, V10, V20, V30) to LCT occurrence was also evaluated.

Results: Forty-four cases of LCT were seen, 30 of which were ischemic; other LCT included valvular disease, arrhythmias, pericardial disease, and heart failure. Median follow up was 10.4 years (range: 0.15 - 23.8). Median Dmean to the heart, right coronary, left anterior descending, and circumflex arteries were 24.6 Gy, 29.8 Gy, 17.3 Gy, and 27.3 Gy, respectively. Both the PCA of the heart and the heart plus CA had first components that explained > 50% of the variance in LCT, and there was no substantial improvement in explanatory power by adding CA dose in addition to whole heart dose to the PCA. Within components, no single dose-volume parameter explained a large proportion of LCT (i.e. loading > 0.5): in both whole heart, and heart plus CA models, the mean heart dose contributed most to explaining LCT (loading = 0.41 and 0.25, respectively).

Conclusions: Our results indicate that estimating dose to CA will not add significant explanatory power to predict LCT in HL survivors, compared with documenting dose to the whole heart only. LCT risk in this setting may be mostly predicted by age, sex, comorbidities, and mean heart dose. However, our study may be underpowered to detect a small contribution from dose to the CA that is distinct from whole heart dose.

62 STEREOTACTIC BODY RADIOTHERAPY FOR LIVER METASTASIS: IMPACT ON SYSTEMIC THERAPY?
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Purpose: The management of patients with distant metastasis has historically been systemic therapy (ST). However, that paradigm is shifting to individually personalized care. Stereotactic body radiotherapy (SBRT) enables non-invasive ablation of liver metastases and its use is increasing despite the lack of randomized evidence. We reviewed the outcomes of liver metastases treated with SBRT at our institution, and evaluated the impact of liver SBRT on the treatment algorithm of metastatic patients on ST.

Materials and Methods: The records of 112 patients with 149 metastatic liver lesions treated with SBRT between 2011 and 2015 were retrospectively reviewed. Indications for treatment were: oligometastases (OM) where the objective was to eradicate all sites of disease (≤ 5 sites); oligoprogression (OP) where only progressing lesions were treated while other sites were stable, and dominant area of progression (DAP) where a growing or symptomatic site was treated even if most or all metastatic deposits were progressing. Lesions were treated with either a 3, 5 or 6 fraction regimen delivered every other day. All patients were evaluable for response based on contrast-enhanced CT obtained at minimum of 4 months after completion of SBRT. Local control (LC), time to liver failure (TLF), time to change ST