

Supplemental Materials

Parameter	Formula
hepatic artery coefficient (HAC)	$[v_1(x_3-x_2)+v_2(x_1-x_3)+v_3(x_2-x_1)] / [a_1(v_2-v_3)+a_2(v_3-v_1)+a_3(v_1-v_2)]$
portal vein coefficient (PVC)	$[a_1(x_3-x_2)+a_2(x_1-x_3)+a_3(x_2-x_1)] / [a_1(v_3-v_2)+a_2(v_1-v_3)+a_3(v_2-v_1)]$
arterial enhancement fraction (AEF)	$(x_2-x_1)/(x_3-x_1)$
arterial phase enhancement	x_2-x_1
portal venous phase enhancement	x_3-x_1

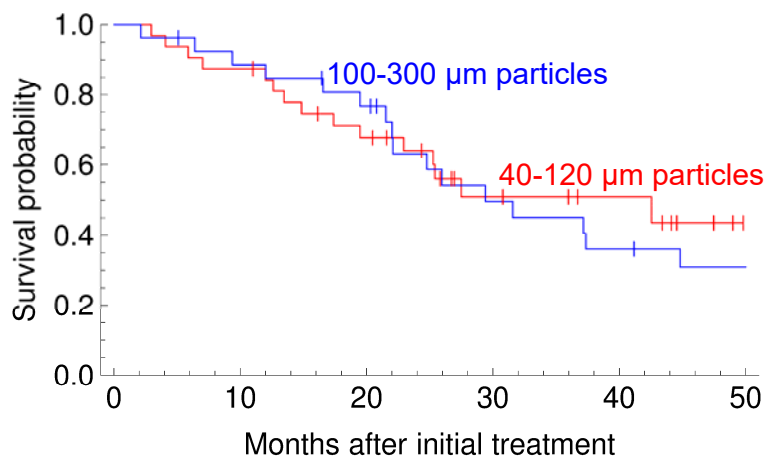
Supplemental Table 1. Enhancement and perfusion parameters for liver tumors (1, 2). HAC is an estimate of the hepatic artery blood supply; PVC is an estimate of the portal vein blood supply; and AEF is related to the arterial blood supply as a fraction of total blood supply. a_1 , a_2 , and a_3 are the average Hounsfield units in the hepatic artery in the non-contrast, arterial, and portal venous phases; v_1 , v_2 , and v_3 are the average Hounsfield units in the portal vein (near the bifurcation) in the non-contrast, arterial, and portal venous phases; and x_1 , x_2 , and x_3 are the average Hounsfield units in the target tumor in the non-contrast, arterial, and portal venous phases. Average Hounsfield units were measured in an elliptical regions of interest (ROI) on an axial slice. The tumor ROIs were drawn to cover as much of the tumor as possible, while avoiding large intratumoral blood vessels. The ROIs had the same size, shape, and anatomic location on each phase.

Embolization particles	Number of patients
40-120 μ m Embospheres	12
40-120 μ m Embospheres, 90-180 μ m PVA foam	13
40-120, 100-300 μ m Embospheres	2
40-120, 100-300 μ m Embospheres, 90-180 μ m PVA foam	3
40-120, 100-300, 300-500 μ m Embospheres, 90-180 μ m PVA foam	2
100-300 μ m Embospheres	3
100-300 μ m Bead Block	3
100-300 μ m Embospheres, 90-180 μ m PVA foam	2
100-300 μ m Bead Block, 90-180 μ m PVA foam	10
100-300, 300-500 μ m Embospheres, 90-180 μ m PVA foam	1
100-300, 300-500 μ m Embospheres, 90-180, 180-300, 500-710 μ m PVA foam	1
100-300, 300-500 μ m Bead Block, 90-180 μ m PVA foam	2
100-300 μ m LC Beads + 150 mg doxorubicin	3
100-300 μ m LC Beads + 100 mg doxorubicin, 90-180 μ m PVA foam	1
100-300 μ m LC Beads + 150 mg doxorubicin, 100-300 μ m Bead Block, 90-180 μ m PVA foam	1
Bland embolization, unknown particle size	4
Total	63

Supplemental Table 2. Embolization particles used.

		# of patients	Complete response	Median OS
Initial particle size	40-120 μm	32	56%	42 months
	100-300 μm	27	37%	29 months
	<i>p</i> value		0.19	0.76
TAE vs. DEB-TACE	TAE	58	52%	32 months
	DEB-TACE	5	20%	22 months
	<i>p</i> value		0.35	0.11

Supplemental Table 3. Response and overall survival after embolization starting with 40-120 μm versus 100-300 μm spherical particles. A prior study (3) also showed no difference in response or overall survival with TAE compared to DEB-TACE.



Supplemental Figure 1. Overall survival after embolization starting with 40-120 μm (red) versus 100-300 μm (blue) spherical particles.

References

1. Boas FE, Brody LA, Erinjeri JP, et al. Quantitative Measurements of Enhancement on Preprocedure Triphasic CT Can Predict Response of Colorectal Liver Metastases to Radioembolization. *AJR Am J Roentgenol.* 2016; 207(3):671-5.
2. Boas FE, Kamaya A, Do B, et al. Classification of hypervascular liver lesions based on hepatic artery and portal vein blood supply coefficients calculated from triphasic CT scans. *Journal of digital imaging.* 2015; 28:213-23.
3. Brown KT, Do RK, Gonen M, et al. Randomized Trial of Hepatic Artery Embolization for Hepatocellular Carcinoma Using Doxorubicin-Eluting Microspheres Compared With Embolization With Microspheres Alone. *J Clin Oncol.* 2016; 34(17):2046-53.