Survival Advantage after Transarterial Chemoembolization for "Operable" Metastatic Carcinoid Reflects Tumor Biology Rather than Efficacy

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BACKGROUND

Transarterial chemoembolization (TACE) has been the therapy of choice for the management of patients with incurable carcinoid liver metastases. We reviewed the outcomes of patients who, in retrospect, may have been candidates for cytoreductive hepatectomy compared to those in whom surgery would never be offered.

METHODS

- We identified 98 patients who had imaging available for review who underwent TACE as primary treatment for incurable liver metastasis.
- Two groups were identified by "operability":
  - "Operable"- Potential resection of ≥ 90% of hepatic tumor burden.
  - "Non-operable"-Adequate debulking not possible.
- Patient and tumor variables compared.
- Response to TACE defined as;
  - Radiographic: decrease in tumor number, size and/or enhancement.
  - Serologic: ≥ 20% reduction in pancreastatin levels.
  - Symptom: reduction in carcinoid-related symptoms and/or decrease in need or dose of sandostatin.

RESULTS

- Patients of similar age, gender, and location of primary tumor.
- Carcinoid syndrome more common in "operable" group.
- Primary tumor more commonly resected in "operable" group. (Table 1)

Table 1. Demographics

Variables	*Operable N=28*	*Non-Operable N=70*	*P value*
Mean Age (Range)	54 (33-71)	57 (29-87)	0.15
Gender M:F	12:16	28:42	0.82
Comorbidities	10 (35%)	23 (32%)	0.81
Carcinoid Syndrome Pre-TACE	26 (92%)	44 (62%)	<0.05
Primary Location			
Intestinal	19 (67.8%)	29 (41.4%)	0.11
Pancreas	5 (17.8%)	20 (28.5%)	
Pulmonary	1 (3.7%)	3 (4.3%)	
Unknown	3 (10.7%)	18 (25.7%)	
Primary Resected	20 (71%)	27 (38%)	<0.05

- Similar TACE complications and mean length of stay.
- No difference in symptomatic, serologic or radiographic response, but a difference in the duration of serologic response favoring the "operable" group. (Table 2)

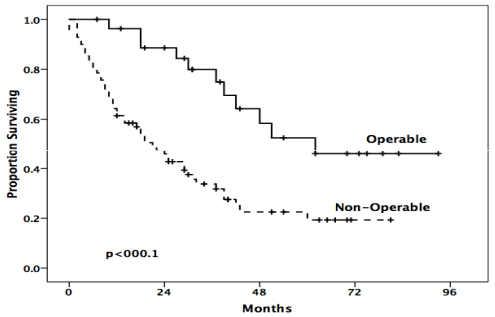
Table 2. Response to TACE

Variables	*Operable N=28*	*Non-Operable N=70*	*P value*
Complications	3 (10%)	7 (10%)	1
Mean (± SD) Length of Stay	4.6 days ± 3.0	5.4 days ± 4.2	0.35
Symptom Response	19 (67%)	41 (58%)	1
Mean (± SD)Duration of Symptom Response	10.6 weeks ± 4.1	13.6 weeks ± 4.8	0.82
Serologic Response	22 (78%)	53 (75%)	1
Mean (± SD) Duration of Serologic Response	20 weeks ± 6.5	14.2weeks ±4.7	0.81
Radiographic Response	10 (35%)	28 (40%)	0.81

- Overall survival was significantly longer after TACE in patients deemed "operable". (Table 3 and Figure)

Table 3. Overall Survival after TACE

	Operable	*Non-Operable*
Median	62 months	21 months
2 years	89%	46%
5 years	53%	19%



CONCLUSIONS

Patients with resectable disease have expected prolonged overall survival relative to those deemed inoperable. However, no advantage was seen in response to or durability of TACE in these patients with more biologically favorable disease.

We conclude that a clinical trial comparing TACE to cytoreductive hepatectomy in patients with resectable yet incurable carcinoid metastases is warranted.