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Does the Addition of Adjuvant Intraoperative Post-Dissection Tumor Bed Chemotherapy During GI Neuroendocrine Tumor Debulking Benefit Patients?

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Background: Midgut neuroendocrine tumor (NET) patients are often diagnosed at an advanced stage with extensive mesenteric lymph node and liver metastasis. The only treatment for potential cure and durable results is resection with extensive debulking. However, even with the most elegant resection, macro and microscopic residual disease at the tumor resection bed remains possible. We hypothesize that local application of 5-florouracil within tumor bed will eliminate the microscopic residual disease post-operatively.

Method: Records of 189 patients who underwent extensive cytoreductive surgeries for stage IV, small bowel NETs with boggy mesenteric lymphadenopathy during 2003-2012 were reviewed. Eighty-six patients who had 5-Florouracil saturated gelfoam strips secured into their mesenteric resection defects served as the study group and 103 patients who did not receive intra-operative chemotherapy as the control. Survival from

time of diagnosis, postoperative morbidity and mortality between the two groups were compared.

Results: Mortality rates at immediate, 30, 60 and 90 days post-operative period were 4, 0, 0, 0 and 0, 2, 0, 2 for the study and control groups, respectively. Minor complications (Clavien-Dindo Grades I & II) at 30, 60 and 90 day post-operative period were 12, 0, 0 and 9, 3, 3 for study and control groups, respectively. Major complications (Grade III & IV) at the same time intervals were 0, 0, 1 and 2, 3, 2 for study and control groups, respectively. Median Kaplan-Meier survival, 5-year and 10-year survival rates are shown below for the study and control groups.

Kaplan-Meier Survival Analysis		
	Study Group	**Control Group**
Total N	86/188 (45%)	103/188 (55%)
Median Survival (months)	236	148
5-year Survival Rate	93%	82%
10-year Survival Rate	83%	74%

Conclusion: Intra-operative tumor resection bed chemotherapy is a safe adjuvant without any discernible toxicity. Furthermore, it might provide survival benefit to midgut NET patients with extensive mesenteric lymphadenopathy undergoing extensive cytoreductive surgery without additional complications.