

1-2020

## The Role of the Uncinate Margin in Pancreaticoduodenectomy for Pancreatic Ductal Adenocarcinoma: A Survival Analysis


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### Recommended Citation

Nauheim, David; Zheng, MD, Richard; Bassig, Jonathan; Chadwick, Matthew; Schultz, Christopher; Lavu, MD, FACS, Harish; Winter, MD, FACS, Jordan R.; Yeo, MD, FACS, Charles J.; and Berger, MD, FACS, Adam C., "The Role of the Uncinate Margin in Pancreaticoduodenectomy for Pancreatic Ductal Adenocarcinoma: A Survival Analysis" (2020). *Phase 1*. Paper 5.  
[https://jdc.jefferson.edu/si\\_hs\\_2022\\_phase1/5](https://jdc.jefferson.edu/si_hs_2022_phase1/5)

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**The Role of the Uncinate Margin in Pancreaticoduodenectomy for Pancreatic Ductal  
Adenocarcinoma: A Survival Analysis**

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**Introduction:** Positive margins during pancreaticoduodenectomy for pancreatic cancer portend worse survival, but additional resection of the uncinate margin is typically unfeasible without major vascular reconstruction. The survival benefit of resecting additional neck or bile duct margins in the face of a positive uncinate is also unknown. We examined the impact of re-resection of these margins on survival.

**Methods:** Patients with pancreatic adenocarcinoma who underwent pancreaticoduodenectomy from 2006-2015. Pancreatic neck, bile duct, uncinate, and duodenal frozen section margins were assessed before and after resection of positive margins. Kaplan-Meier survival curves were compared with log-rank tests. Multivariable Cox regression was used to assess the effect of margin status on overall survival.

**Results:** Among 508 patients identified, 388 (76.4%) underwent a pylorus-preserving procedure, 435 (85.6%) had T3 tumors, and 379 (74.6%) had nodal involvement. There were 21 instances where an uncinate margin was concurrently positive with a neck or bile duct margin; this additional neck or bile duct margin was resected in 13 cases (61.9%). Resection of additional margins when the uncinate was concurrently positive was not associated with improved survival ( $p=0.36$ ). Median survival with and without positive uncinate margins was 13.8 vs. 19.7 months

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( $p=0.04$ ). A positive uncinate margin was associated with decreased survival independent of other margins and cancer stage (HR 1.28 [95% CI 1.00-1.65]).

**Conclusion:** In patients with pancreatic adenocarcinoma, positive uncinate margins are associated with decreased overall survival; resection of additional margins at the neck and bile duct in those with a positive uncinate margin is not warranted.