



A Value-Based Comparison Of The Therapy For Borderline Resectable And Locally Advanced Pancreatic Cancer At Different Institutions

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Abstract

Introduction: A comparative analysis of the borderline resectable and locally advanced pancreatic cancer has been conducted between different institutions. The modalities of cure and the therapy used were retrospectively reviewed. With respect to the outcomes following the treatment, the role of surgery and of the chemotherapeutic regimens were carefully analyzed. Furthermore the economic aspect between all the institutes may significantly vary. The purpose of this study is to compare the financial results to further evaluate the economical aspect of each clinical pathway.

Methods: Between years 1998-2014. a retrospective economical analysis of six clinical pathways was performed using a Health Insurance Portability and Accountability Act (HIPPA) compliant national database to compare costs of different regimens in patients with BPA and LAPC.

Results: The outcomes of each regimen were compared based on financial data of the average charge per patient and average lenght of stay for each procedure. The average charge per patient for chemotherapy was between \$1,818 (CP6) and \$14,453(CP1); the total cost for surgical resection (amongst the patients who also had other treatments) was between \$65,255(CP3) and \$127,709(CP6), surgery alone was \$66,827(CP2) and \$172,792(CP6). The costs for radiotherapy for the patients undergoing one of the treatments mentioned, vary between \$6,016(CP2) and \$47,235(CP1), radiation only being performed just by the majority of the clinical pathways within the range of \$26,005(CP3)-\$62,462(CP1). Intraoperative radiotherpy was performed at one single institute from our study with an average cost of \$150,713. Average Length of Stay amongst chemotherapy patients vary from 1.0 -1.4 days. Surgical patients have an average LOS between 7.4-18.4 days. Patients undergoing surgery only shown an average LOS between 7.5- 21.4 days. Radiotherapy 1-9.8 days, and radiotherapy only 2.5-12. Intraoperative radiation ALOS = 10 days.

Conclusion: The differences in costs per patient substantially vary between the six clinical pathways. Further comparison of the outcomes between the clinical pathways is recommended to assess the cost and benefit of each regimen.

Introduction

Pancreatic cancer remains a challenging disease according to National Cancer Institute. 55,440 new cases are estimated in the United States in 2018, with a mortality of 44,330. With all the existent therapy to cure this disease, 5 years survival of pancreatic cancer is only 8.2%. Hence, a comparative analysis of the borderline resectable and locally advanced pancreatic cancer has been conducted between different institutions. The modalities of cure and the therapy used were retrospectively reviewed. With respect to the outcomes following the treatment, the role of surgery and of the chemotherapeutic regimens were carefully analyzed. Furthermore the economic aspect between all the institutes may significantly vary. Because there is no consensus combination therapy nor a standardized approach for the management of borderline resectable pancreatic cancer and locally advanced pancreatic cancer, and while multimodality treatment regimens are advocated, we seek to compare economical results to further evaluate the financial aspect of each clinical pathway.

Methods

A retrospective financial analysis of a previously literature review has been conducted for average costs and LOS charges of BorderlineResectable Pancreatic Adenocarcinoma and Locally Advanced Pancreatic Cancer. In the United States , pancreatic cancer rates are comparable and of equal concern. Between years 1998-2014. a retrospective economical analysis of six clinical pathways was performed using a Health Insurance Portability and Accountability Act (HIPPA) compliant national database to compare costs of different regimens in patients with BPA and LAPC.

Results

The outcomes of each regimen were compared based on financial data of the average charge per patient and average lenght of stay for each procedure. The average charge per patient for chemotherapy was between \$1,818 (CP6) and \$14,453(CP1); the total cost for surgical resection (amongst the patients who also had other treatments) was between \$65,255(CP3) and \$127,709(CP6), surgery alone was \$66,827(CP2) and \$172,792(CP6). The costs for radiotherapy for the patients undergoing one of the treatments mentioned, vary between \$6,016(CP2) and \$47,235(CP1), radiation only being performed just by the majority of the clinical pathways within the range of \$26,005(CP3)-\$62,462(CP1). Intraoperative radiotherpy was performed at one single institute from our study with an average cost of \$150,713. Average Length of Stay amongst chemotherapy patients vary from 1.0 -1.4 days. Surgical patients have an average LOS between 7.4-18.4 days. Patients undergoing surgery only shown an average LOS between 7.5- 21.4 days. Radiotherapy 1-9.8 days, and radiotherapy only 2.5-12. Intraoperative radiation ALOS = 10 days.

Conclusion

The differences in costs per patient substantially vary between the six clinical pathways. The average LOS vary, as well as costs for chemotherapy, surgery alone or in combination with other treatment significantly vary. Further comparison of the outcomes between the clinical pathways is recommended to assess the cost and benefit of each regimen.

Pancreatic cancer (Medicare)	CP1 MD Anderson	CP2 University of Virginia	CP3 Virginia Mason Medical	CP4 Moffitt Center	CP5 MGH	CP6 University of Louisville
Provider ID	450076	490009	500005	100271	220071	180141
Number of patients diagnosed	272	343	723	952	463	175
YEARS	1999-2005, 2006	2005-2008	2008-2012	2006-2013	2011-2014	2009-2012
Chemotherapy	82	49	237	303	137	57
Average charge/patient	\$14,453	\$7,296	\$5,546	\$14,974	\$6,845	\$1,818
Average LOS	1.3	1.4	1	1.0	1.1	1.1
Surgery	40	70	136	209	97	29
Average charge/patient	\$79,414	\$65,550	\$65,255	\$75,367	\$111,261	\$127,709
Average LOS	10.7	8.9	10	11.7	7.4	18.4
Surgery only	24	62	94	150	71	21
Average charge/patient	\$80,298	\$66,827	\$67,738	\$75,281	\$111,533	\$152,792
Average LOS	11	8.9	10.3	11.8	7.5	21.4
Radiotherapy	<11	<11	<11	<11	25	<11
Average charge/patient	\$47,235	\$6,016	\$32,779	\$33,924	\$41,656	\$ 29,905
Average LOS	9.8	1	6.3	6.7	4.3	4.8
Radiotherapy only	<11	0	<11	<11	<11	0
Average charge/patient	\$62,462	\$ -	\$26,005	\$27,410	\$33,643	-
Average LOS	12	-	4	2.5	3.9	-
Intraoperative radiotherapy	0	0	0	0	<11	0
Average charge/patient	\$ -	\$ -	\$ -	\$	\$150,713	-
Average LOS	-	-	-		10	

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