

(23)

胰臟癌治療新境界

Breakthrough in the Treatment of Pancreatic Cancer

時間：113年6月22日(星期六) 13:30~17:30
地點：臺北榮民總醫院 中正 18 樓骨科部會議室

| | | |
|--------------------|--|--------------------------|
| 13:30-13:40 | Opening Remarks | 石宜銘教授 Yi-Ming Shyr |
| | 座長：陳明晃 教授 (Ming-Huang Chen) | |
| 13:40-14:20 | 胰臟癌最新精準醫療 Update Precision Medicine in Pancreatic Cancer | 于洪元醫師 Hung-Yuan Yu |
| 14:20-15:00 | 胰臟癌的重粒子治療 Carbon ion Therapy in Pancreatic Cancer | 賴宜君醫師 I-Chun Lai |
| 15:00-15:30 | Coffee Break | |
| | 座長：藍耿立 教授 (Keng-Li Lan) | |
| 15:30-16:10 | 達文西機器手臂輔助胰臟微創手術 Minimally-Invasive Robotic Pancreaticoduodenectomy | 王心儀教授 Shin-E Wang |
| 16:10-16:50 | 局部晚期胰臟癌多型性治療經驗分享 Case Sharing in Multimodality Treatment for Locally-Advanced Pancreatic Head Cancer | 石柏軒醫師 Bor-Shiuan Shyr |
| 16:50-17:20 | Panel Discussion | |
| 17:20-17:30 | Closing Remarks | 李重賓教授 Chung-Pin Li |

Update precision medicine in pancreatic cancer

胰臟癌最新精準醫療

Hung-Yuan Yu

于洪元

Division of Gastroenterology and Hepatology, Department of Medicine and Therapeutic and Research Center of pancreatic Cancer, Taipei Veterans General Hospital, Taipei, Taiwan, ROC

臺北榮民總醫院 內科部 胃腸肝膽科及胰臟癌治療暨研究中心

Pancreatic cancer is one of the most lethal malignancies which will soon be the secondary leading cause of cancer death in United States in 2030. More than half patients were diagnosed with advanced or metastatic disease. Therefore, systemic treatment plays an important role in pancreatic cancer treatment. Unfortunately, the effect of traditional chemotherapy was disappointed. Even though the chemotherapy has a great step in recent years, the median overall survival in metastatic pancreatic cancer was still less than one year. There is still an unmet need for pancreatic cancer treatment.

Despite the rapid progress of precision medicine, there was little breakthrough in the treatment of pancreatic cancer. In fact, we have got much more information about the genetics and transcriptomics of pancreatic cancer, but there were no agents that target the common genetic alterations, including KRAS, TP53, CDKN2A and SMAS4. In previous study, potentially actionable alteration was identified in 12-25% patients. In Know Your Tumor registry trial, significantly longer overall survival was observed in patients who received a matched targeted therapy. Homologous recombination repair (HR) deficiency (HRD) is identified in a significant minority of patients with pancreatic cancer. Germline BRCA1/2 and germline PALB2 are considered core HR genes, which are identified in 5-6% of unselected pancreatic cancer cases. In patients with gBRCA1/2 mutations, superior response was documented with platinum-based therapy. In 2019, Olaparib, a PARPi, was approved for patients with gBRCA1/2-mutant advanced/metastatic pancreatic cancer, as maintenance therapy. Mismatch repair (MMR) deficiency (MMRd) is a well-known tumor-agnostic biomarker for pembrolizumab and could be a predictor for immune check-point inhibitor. Despite several clinical trials for potential target therapies failed, there are still several ongoing clinical trials. We hope that we could treat each patient with a personalized treatment strategy to optimizing the clinical outcomes and improve patients' quality of life in the future.

Carbon ion therapy in pancreatic cancer

胰臟癌的重粒子治療

I-Chun Lai

賴宜君

Department of Heavy Particles & Radiation therapy and Therapeutic and Research Center of pancreatic Cancer,

Taipei Veterans General Hospital, Taipei, Taiwan, ROC

臺北榮民總醫院 重粒子及放射腫瘤部 胰臟癌治療暨研究中心

Pancreatic cancer is the fourth most common cause of cancer-related mortality worldwide, and the prognosis remains poor despite aggressive therapy.

Treatment with carbon ions provides several unique physical and radiobiologic properties. Carbon ions exhibit a characteristic energy distribution in depth, known as the “Bragg Peak,” where low levels of energy are deposited in tissues proximal to the target, and the majority of energy is released in the target. Distal tissues receive little energy, although, unlike protons, there is energy deposited distally due to nuclear fragmentation. Additionally, a steeper lateral dose penumbra is observed at greater depths than with heavy ions, such as carbon, than with photons or protons. Furthermore, carbon exhibit a higher linear energy transfer (LET) than photons and protons. This leads to a higher relative biological effectiveness (RBE), where damage caused by carbon ions is clustered in the DNA, overwhelming the cellular repair systems. With a higher LET than other methods of radiation and the characteristics of the Bragg Peak, CIRT provides a promising treatment choice for providing higher doses to targets while reducing irradiation to organs at risk (OARs).

Here, we will demonstrate our treatment results in pancreatic cancer using carbon ion therapy combining with chemotherapy.

Minimally-invasive robotic pancreaticoduodenectomy

達文西機器手臂輔助胰臟微創手術

Shin-E Wang, Yi-Ming Shyr, Shih-Chin Chen, Bor-Uei Shyr, Bor-Shiuan Shyr

王心儀 石宜銘 陳世欽 石柏威 石柏軒

Division of General Surgery, Department of Surgery and Therapeutic and Research Center of pancreatic Cancer, Taipei Veterans General Hospital, Taipei, Taiwan, ROC

臺北榮民總醫院 外科部 一般外科及胰臟癌治療暨研究中心

Pancreaticoduodenectomy, so-called “Whipple operation”, one of the most challenging procedure, is a time-consuming, tedious and technique-demanding complex operation. Traditionally, this procedure used to be performed usually by open approach, which would result in a large and painful wound. With the introduction of laparoscopic and robotic surgery, minimally invasive surgery (MIS) has emerged as a worldwide trend to improve wound cosmesis and mitigate the wound pain. Although MIS for pancreaticoduodenectomy has also been attempted at some centers, the role of MIS, either robotic or laparoscopic approach has not been well established for the complex pancreaticoduodenectomy.

Giving that laparoscopic pancreaticoduodenectomy has been limited by its technical complexity and the high level of advanced laparoscopic skills required for pancreatic reconstruction, robotic surgical system is introduced to overcome several limitations related to the laparoscopic approach. Providing high-quality three-dimensional vision, an optical high magnification, articulation of robotic instruments, greater precision with suture targeting, and elimination of surgeon tremor, robotic surgical systems innovatively perform more delicate and complex procedures involving extensive dissection and suturing technique such as pancreaticoduodenectomy. Although associated with longer operative time, robotic pancreaticoduodenectomy (RPD) has been claimed to have the benefits of less delayed gastric emptying, less blood loss, shorter length of postoperative stay, and lower wound infection rate, as compared with the traditional open pancreaticoduodenectomy (OPD). Moreover, RPD seems to be not only technically feasible and also justified without compromising the survival outcomes for pancreatic head and ampullary adenocarcinomas.

Therefore, RPD could be recommended not only to surgeons but also to patients in terms of surgical feasibility, surgical outcomes and patient satisfaction.

Case sharing in multimodality treatment for locally-advanced pancreatic head cancer

局部晚期胰臟癌多型性治療經驗分享

Bor-Shiuan Shyr

石柏軒

Division of General Surgery, Departments of Surgery and Therapeutic and Research Center of pancreatic Cancer, Taipei Veterans General Hospital, Taipei, Taiwan, ROC

臺北榮民總醫院 外科部 一般外科及胰臟癌治療暨研究中心

Background

Locally advanced pancreatic head cancer were considered as unresectable disease; however, with the adaptation of neoadjuvant treatment with advanced modern radiotherapy technique, more-and-more studies demonstrated promising outcomes of such patients after receiving conversion surgical treatment. We hereby present our humble experience of the first case of initially unresectable locally advanced pancreatic head cancer treated with conversion pancreaticoduodenectomy surgery after neoadjuvant chemotherapy and carbon-ion radiotherapy.

Presentation of case

A 74-year-old man was initially diagnosed with locally advanced pancreatic head-to-uncinate process ductal adenocarcinoma with tumor encasing SMV/main portal vein and obliteration of splenic artery, common hepatic artery, and SMA (cT4N0M0). After receiving 8 weeks of neoadjuvant chemotherapy Gemcitabine (1000mg/m² on day 1, 8, and 15 in 4 weeks cycle) followed by 12 fractions of concurrent carbon-ion radiotherapy, a dramatic decline in serum tumor marker CA 19-9 from 219 U/mL to 50.4 U/mL was observed. He then underwent another 7 weeks of maintenance chemotherapy with SLOG regimen (oral S-1, leucovorin, oxaliplatin, and gemcitabine) followed by conversion pancreaticoduodenectomy surgery with successful R0 resection. Narrowing of portal vein with massive ascites and micro liver abscess were observed after surgery, which were successfully treated by percutaneous portal vein stenting and intravenous antibiotic therapy.

Conclusion

This is our first case experience of initially locally advanced unresectable pancreatic head cancer successfully treated with conversion surgery after neoadjuvant chemotherapy and carbon-ion radiotherapy.