# Survival of Pancreatic Cancer Patients in Dr Cipto Mangunkusumo National Referral Hospital Jakarta from November 2018 to December 2018

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# ABSTRACT

**Background:** Pancreatic cancer is a leading cause for cancer deaths worldwide and its survival rate remains low. The one year- and five year-survival rate remain as low as 21% and 6-8% consecutively. Little is known about the survival rate of pancreatic cancer in Indonesia. This study aims to evaluate the survival rate of pancreatic cancer patients at Gastrointestinal Endoscopy Center, Cipto Mangunkusumo Hospital, Jakarta, during November 2018 to December 2018.

**Method:** This retrospective cohort study extracted the registry data of newly diagnosed pancreatic cancer patients between November 2018 to December 2018 from the Gastrointestinal Endoscopy Center, Cipto Mangunkusumo Hospital, Jakarta. All patients were followed since they were diagnosed to two months after diagnosis or 31<sup>st</sup> December 2018 or to their date of death, whichever came first.

**Results:** We found 12 newly diagnosed pancreatic cancer cases between November 2018 to December 2018. The mean age at diagnosis was 55 years old, with 58% male, 50% sundanese, and 75% patient come from low educated level. About 58% cases presented with cholangitis, and the mean bilirubin concentration at diagnosis was 26 mg/dL. All patient came with an obstructive jaundice symptoms, and 91% had endoscopic biliary drainage procedure. After 2 months of observation, we found 16% patient died due to unresolved infection.

*Conclusion:* There were 12 cases of pancreatic cancer, of which 16% pancreatic cancer patients died within 2 months of follow up. Infection is the main cause of morbidity and mortality in pancreatic cancer patients.

Keywords: pancreatic cancer, survival, mortality, cancer death

## ABSTRAK

Latar belakang: Kanker pankreas merupakan salah satu penyebab terbanyak kematian akibat kanker di seluruh dunia dengan angka kesintasan yang tetap rendah. Angka kesintasan satu dan lima tahun tetap rendah yaitu 21% dan 6-8%. Tidak banyak yang diketahui mengenai angka kesintasan kanker pankreas di Indonesia. Studi ini diharapkan bisa mengevaluasi angka kesintasan kanker pankreas di Pusat Endoskopi Saluran Cerna, Rumah Sakit Umum Pusat Nasional Cipto Mangunkusumo, Jakarta pada November 2018 sampai December 2018

Metode: Studi ini menggunakan desain kohort retrospektif dengan mengambil data register dari kasus kanker pankreas yang baru didiagnosis pada bulan November sampai Desember 2018 dari Pusat Endoskopi Saluran Cerna, Rumah Sakit Umum Pusat Nasional (RSUPN) Cipto Mangunkusumo, Jakarta. Semua pasien diikuti sejak mereka didiagnosis sampai dua bulan setelah diagnosis atau 31 Desember 2018 atau pada tanggal kematian sesuai mana yang terjadi lebih dahulu

**Hasil:** Studi ini menemukan 12 kasus baru kanker pankreas diantara November 2018 sampai Desember 2018. Rerata umur saat diagnosis adalah 55 tahun dengan 58% laki-laki, 50% suku Sunda, dan 75% pasien memiliki tingkat pendidikan rendah. Sekitar 58% kasus datang dengan kolangitis dan rerata konsentrasi bilirubin adalah 26 mg/dL. Semua pasien datang dengan gejala ikterus obstruktif dan pada 91% pasien dilakukan prosedur drainase bilier secara endoskopis. Setelah 2 bulan, kami menemukan 16% pasien meninggal karena infeksi yang tidak tertangani.

Simpulan: Terdapat 12 kasus kanker pankreas yang ditemukan. Enam belas (16) % dari semua pasien pankreas meninggal dalam 2 bulan tindak lanjut. Infeksi merupakan penyebab utama dari morbiditas dan mortalitas pada pasien kanker pancreas.

Kata kunci: kanker pankreas, kesintasan, mortalitas, kematian karena kanker

#### INTRODUCTION

Pancreatic cancer is a rare, highly aggressive malignancy with high mortality rate. It is one of the deadliest cancer and a leading cause of death for malignancy, accounting for 7% of cancer deaths and the 7<sup>th</sup> largest number of cancer death worldwide.<sup>12</sup> The mortality rate is reported to be 8.6 per 100,000 populations. Despite medical advances, the one year-and five year-survival rate remain as low as 21% and 6-8% consecutively.<sup>3</sup> Even at the high-volume surgery centers for pancreas, the mortality rate improves but remains high.

The numbers of new cases detected are almost similar to the numbers of cancer deaths, approximately 330,000 cases per year, because early diagnosis at curable stage is very difficult.<sup>2</sup> Most cases of pancreatic cancer are diagnosed at advanced stage since the early stage are usually asymptomatic. Patients with advanced stage of pancreatic cancer, of which the cancer has metastasized to other organs, have worse survival rate. Some studies reported that the life expectancy was limited to 2.5 months with best supportive care.<sup>3</sup> The risk factors for pancreatic cancer include aging, family history of inherited disorders like malignancy, smoking, obesity, new onset of diabetes, pancreatitis and certain races.<sup>4</sup>

In Indonesia, it is estimated that pancreatic cancer deaths reached 0.38% of total deaths. The mortality rate is 3.22 per 100,000 populations based on World Health Ranking 2014.<sup>2</sup> However, this data might be underestimated due to undiagnosed cases and limited data support. Until recently, there is no data regarding the characteristics of pancreatic cancer

patients in Indonesia and its survival rate. This study aims to evaluate the survival rate of pancreatic cancer patients in Indonesia, represented by patients in Cipto Mangunkusumo Hospital, Jakarta, who came to its Gastrointestinal Endoscopy Center.

#### METHOD

This study is a retrospective cohort study performed in December 2018. The data was collected from medical records and registered data of patients in Gastrointestinal Endoscopy Center, Cipto Mangunkusumo Hospital, Jakarta. New cases of pancreatic cancer diagnosed during November 2018 to December 2018 were obtained from the Gastrointestinal Endoscopy Center registry. Since most cases detected were advanced cases of pancreatic cancer, in which the life expectancy is less than three months in best supportive care, we decided to limit the survival rate to two months. All patients with pancreatic cancer were followed since they were diagnosed to two months after diagnosis or 31st December 2018 or to their date of death, whichever came first. We described patient demographics, disease characteristics and the length of follow up by patient age at diagnosis.

#### RESULTS

The number of new cases of pancreatic cancer diagnosed in Gastrointestinal Endoscopy Center, Cipto Mangunkusumo Hospital, Jakarta between November 2018 to December 2018 were 12 cases. During this 2-month period, 12 cases were diagnosed using endoscopic ultrasound (EUS) and endoscopic retrograde cholangiopancreatography (ERCP). The majority of cases diagnosed was advanced pancreatic cancer, mainly due to an infiltrative finding of the ERCP. From all these 12 patients, 58% were men with mean age at diagnosis was  $55 \pm 5.61$  years. Women were younger than men, with mean age of 50  $\pm$  7.1 years compared to 55  $\pm$  5.6 years in men. In the younger age groups, the incidence of pancreatic cancer was mainly detected in women. The male incidence steadily increased with age and mostly was diagnosed in over than 60 years old. Of these pancreatic cancer patients, 50% were rural residents while the others were urbans The majority of ethnicity of patient was Sundanese (50%) and Javanese (25%). In this study, the mean bilirubin level at the time of diagnosis was  $26 \pm 10.2 \text{ mg/dL}.$ 

Table 1.	Basic	characteristics	of	sub	jects
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Variable	n (%)
Mean age (SD)	55 (5.61)*
Mean bilirubin level (SD)	25 (10.2)*
Cholangitis	7 (58)
Gender	
Male	7 (58)
Female	5 (42)
Ethnics	
Sundanese	6 (50)
Javanese	3 (25)
Betawi	2 (16)
Melayu	1 (9)
Level of education	
Primary	9 (75)
Secondary	1 (9)
Tertiary	2 (16)
Residential area	
Urban	7 (58)
Rural	5 (42)
Insurance	
National health insurance	11 (91)
Regional health insurance	1 (9)

\*mean, SD

Group ages (year)	n (%)
41-50	2 (16)
51-60	7 (58)
61-70	3 (26)
Total	12 (100)

## Age Distribution



There were two patients (16%) died during follow up. The cause of deaths were sepsis; one case was related to biliary infection and the other one was related to pulmonary infection.

#### DISCUSSION

The American Cancer Society's estimated 55,440 new cases of pancreatic cancer in the United States in 2018, of which 44,330 people were predicted to have cancer-related deaths.<sup>5</sup> Pancreatic cancer is the fourth most fatal cancer in men after lung, colorectal and prostate, and also the fourth most fatal cancer in women after breast, colorectal and lung cancer.<sup>6</sup> Data from WHO showed that the incidence of pancreatic cancer in Indonesia is 3 cases per 100,000 population. These data might also be underestimated because of many undiagnosed cases.<sup>5</sup>

This is a descriptive study about patients who underwent pancreatic cancer evaluation and diagnosis at Gastrointestinal Endoscopy Center, Mangunkusumo Hospital, Jakarta, during November 2018 to December 2018. In these two months, there was 12 newly diagnosed pancreatic cancer cases using either EUS or ERCP. Most of the cases diagnosed were advanced pancreatic cancer due to the infiltrative findings on ERCP.

Pancreatic cancer is caused by an abnormal and uncontrolled growth of cells within the pancreas, that usually asymptomatic in the early span of disease.<sup>7,8</sup> Most cases of pancreatic cancer are diagnosed at advanced stage, which might be reflected in this study. All patients came with obstructive jaundice, in which 58% cases presented with cholangitis. Cholangitis is one of the most common complications of malignant bile duct obstruction and consequently the most common presenting condition in our patients. We found that 58% patients had cholangitis, therefore needed the urgent biliary drainage. This finding is consistent with Jain et al, who found that malignant cause of biliary obstruction is mostly due to pancreatic cancer.<sup>7</sup>

We found that the mean age at diagnosis in our study is younger compared to other study, such as Raju et al.<sup>3</sup> The mean age of diagnosis in our study was 55 years old, compared to Raju et al which was 70 years old. This might be caused by a difference of exposure to known or suspected risk factors related to lifestyle or the environment, such as smoking.<sup>5</sup> From the age distribution table we can see that the highest prevalence of pancreatic cancer is within the 6th decade. It is known that the risk of pancreatic cancer is increasing by age, but we only found 3 cases in over 71 year old group. This might be caused by a poor survival rate of pancreatic cancer.

In our study, all of the patient had an endoscopic drainage, 10 cases (83,4%) received via ERCP, 1 case had undergone Endoscopic Ultrasound Biliary Drainage with EUS-guided choledocoduodenostomy (EUS-CDS) and 1 case had undergone percutaneous transhepatic biliary drainage (PTBD). Compared to Jain et al study, only 55% patient in Jain et al study underwent endoscopic drainage, while the other 45% had PTBD.7 Previous studies from Zhao et al and Bapaye et al have discussed about the superiority of ERCP and EUS-BD over PTBD.<sup>9,10</sup> Bapaye et al found that there was a significant difference of successful rate of drainage between EUS-BD and PTBD in case of failed cannulation with ERCP.<sup>10</sup> This may explain the small number of PTBD technique done in our center. Unless the condition of patient is not

stable enough to undergo endoscopic procedure, PTBD is not a preferable option due to an increase risk of complication such as infection, leak, or even death.<sup>10</sup>

We found that there were two patients died during follow up (16%). The cause of deaths were sepsis; one case was related to biliary infection and the other one was related to pulmonary infection. Previous study from Torgerson, showed that the causes of morbidity and mortality might be related to the nature of the disease. Increased risk of venous thromboembolism, malignant biliary obstruction, and malignant gastric outlet obstruction, might increase risk of infection, which was in our study, was the main cause of death.<sup>11</sup> Pancreatic cancer remains as one of the deadliest cancer type. The Mortality/Incidence ratio is 98%, with overall five-year survival is only 6%. The different finding might be due to different time length of follow up. Our study only use 2-month follow up to evaluate the survival of the patients, while others study usually use a longer period to follow up.<sup>5</sup>

Survival rate of pancreatic cancer is affected by many factor, such as staging at the time of diagnosis, tumor size, presence of complication, age, sex, lifestyle and overall health. Further study about factors affecting survival rate might be needed to evaluate whether there was a significant difference of survival and risk factor between Indonesia and global data.

The limitation of his study was the short period of follow up, which might underestimate the fatality of the cancer, not known stages of diseases and lack of baseline data of tumor markers and biopsy.

#### CONCLUSION

In summary, pancreatic cancer is one of the leading causes of cancer deaths worldwide with reported high mortality rate and low short-term survival rate. It is very important to understand the epidemiology, demographics and survival of these patients in order to carry out better prevention and management of this challenging cancer. However, there is still limited data available regarding the demographics and epidemiology of this malignancy, especially in Indonesia. This report provides brief data regarding the survival, mortality rate and demographics of pancreatic patients in the Gastrointestinal Endoscopy Center, Cipto Mangunkusumo Hospital, Jakarta, the leading national referral hospital in the country. Future study with longer period of follow up is needed.

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