

中文題目：癌症及非癌症引起大量心包膜積液且接受心包膜穿刺術的臨床預後

英文題目：Outcomes of Patients with and without Malignancy Undergoing Percutaneous Pericardiocentesis for Pericardial Effusion

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***Background:***

In patients with a large, symptomatic pericardial effusion (PE), percutaneous needle pericardiocentesis has been the most useful therapeutic procedure for the early management of cardiac tamponade, and it is also used as a diagnostic procedure in certain patients who required cytologic proof, even though the diagnostic yield is low. In patients with cardiac tamponade, echocardiography is the main method for diagnosis and evaluation of hemodynamic status. Echo-guided percutaneous needle pericardiocentesis can be performed after choosing the best anatomical approach among the apical, subcostal, and parasternal approaches. The major risks associated with percutaneous pericardiocentesis are chamber or coronary artery laceration requiring surgery, injury to an intercostal vessel necessitating surgery, and pneumothorax requiring chest tube placement. Moreover, the causes of PE have changed, and the prognosis of PE may differ over time due to the aging society.

PE commonly occurs in patients with malignancy and has been reported in up to 21% of patients, and lung cancer is the most common primary malignancy associated with PE, followed by breast cancer and lymphoma. Malignancy is a common cause of PE and is a marker of poor prognosis. PE associated with malignancy may lead to cardiac tamponade, a life-threatening condition. Pericardial fluid drainage is typically performed in symptomatic patients and may play a role in the diagnosis and staging. Surgical drainage can be used in the management; however, it is associated with a high rate of morbidity. In cancer patients with a poor prognosis, surgery may not be suitable as it involves high risk. Therefore, a less invasive strategy of echo-guided percutaneous needle pericardiocentesis has the potential for safe and effective management of these patients with cancer. However, the

long-term outcomes of pericardiocentesis are less defined in the East Asian population.

Therefore, this study aimed to evaluate the etiologies, clinical outcomes, and complications of patients with a large, symptomatic PE treated with echo-guided pericardiocentesis.

### ***Methods:***

Between July 2010 and December 2020, a total of 502 patients underwent echo-guided percutaneous pericardiocentesis for PE at our hospital. The reasons for PE were malignancy (N=277), infection (N=42), pericarditis (N=21), uremia (N=16), thyroid dysfunction (N=4), connective tissue disease (N=5), procedure related (N=51), trauma (N=3), unknown (N=50), post-myocardial infarction (N=9), heart failure (N=18), liver cirrhosis (N=1), and aortic dissection (N=5). The comorbidities, echocardiographic findings, lab data, color and laboratory data of PE, complications, and all-cause mortality were compared between the malignancy and non-malignancy groups.

### ***Results***

In patients with malignancy related PE, younger age, male sex, prior pericardiocentesis, higher serum levels of white blood cells and lactic acid dehydrogenase, and combined pleural effusion were noted when compared to patients with non-malignancy-related PE. A higher incidence of in-hospital and 1-year mortality and shorter duration of follow-up were observed in patients with malignancy-related PE than in patients with non-malignancy-related PE. The Kaplan-Meier curve of 1-year all-cause mortality differed significantly between the two groups (Figure 1). In patients with malignancy-related PE, the Kaplan-Meier curve of 1-year all-cause mortality significantly differed between patients with or without metastasis (Figure 2A); however, PE with or without malignant cells did not influence the prognosis (Figure 2B).

Figure 1.

A Kaplan-Meier curve of the 1-year all-cause mortality between the non-malignancy and malignancy groups

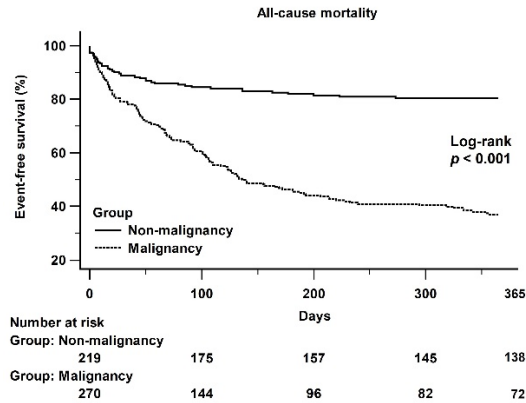
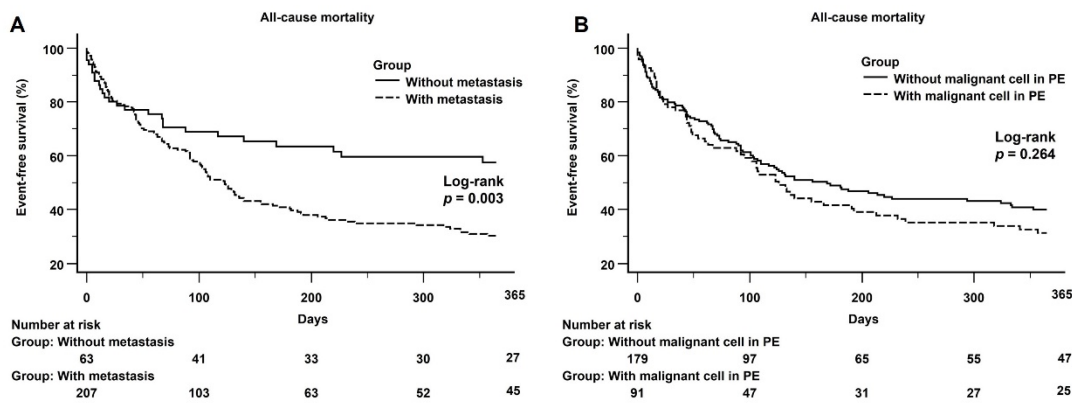


Figure 2.

A: Kaplan-Meier curve of the 1-year all-cause mortality between the subgroups with and without metastasis

B: Kaplan-Meier curve of the 1-year all-cause mortality between the subgroups with and without malignancy in PE



### Conclusions

Patients with malignancy-related PE requiring percutaneous pericardiocentesis had a poor prognosis.

In the patients with malignancy, a higher incidence of all-cause mortality was noted in the patients with metastasis but did not differ between the groups with and without malignant cells in PE.