INTRAPERICARDIAL CARBOPLATIN IN THE MANAGEMENT OF MALIGNANT PERICARDIAL EFFUSION IN BREAST CANCER : A PILOT STUDY

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【Introduction】

- Breast cancer is the second most common primary cancer associated with malignant pericardial effusion (MPE).
- Previous studies examined a broad range of malignancies, and did not include a sufficient number of breast cancer patients with MPE to establish the most suitable sclerosants specific to this category.
- The administration of 300mg of carboplatin (CBDCA) to the pericardial space in patients with non-small cell lung cancer (NSCLC) was effective for the control of MPE.
- The efficacy and safety of intrapericardial CBDCA have never been evaluated in breast cancer.

【Aim】

In this study, we assessed the clinical significance of intrapericardial CBDCA following catheter drainage in patients with breast cancer-related MPE.

【Methods】

A catheter was inserted percutaneously into the pericardial space under echocardiographic guidance. After the effusion was completely drained, 150 mg of CBDCA dissolved in 20ml saline was instilled into the pericardial space through the drainage catheter. The catheter was clamped and reopened after 2 hours. When the drainage volume reached less than 50 ml/day, the catheter was removed. In cases where the catheter could not be removed within 7 days of treatment, CBDCA was administered a second time.

【Results】

Eight patients with breast cancer-related symptomatic MPE were treated at the Gunma prefectural cancer center between July 2010 and March 2016.

【Conclusions】

- Intrapericardial instillation of CBDCA after catheter drainage appears to be safe and effective for the management of MPE associated with breast cancer.
- Six patients received systemic therapy after the control of MPE with few adverse events.
- As the number of patients in this study was small, a large-scale phase II study is warranted to compare intrapericardial CBDCA administration with extended catheter drainage alone to manage MPE in breast cancer.

Table 1. Patient characteristics	Patients, n (%)	
Median age (range)	59 (47-73)	
Gender Female/Male	8/0	(100/0%)
Stage Postoperative recurrence	8	(100%)
Histology		
Invasive ductal carcinoma	6	(75%)
Invasive lobular carcinoma	1	(13%)
Other	1	(13%)
PS before the insertion of catheter 0/1/2/3	0/1/4/3	(0/13/50/38%)
PS after the removal catheter 0/1/2/3	1/7/0/0	(13/88/0/0%)

Table 2. Treatment outcomes	Patients, n (%)	
Re-accumulation of MPE at 1 month after intrapericardial carboplatin administration Yes/No	0/8	(0/100%)
Survival at 1 month after intrapericardial carboplatin administration Alive/Death	8/0	(100/0%)
Systemic therapy After the control of MPE Yes/No	6/2	(75/25%)
Regimen of systemic therapy		
Chemotherapy	4	(50%)
Hormonal therapy	4	(50%)
Targeted therapy	1	(13%)

Table 3. Adverse events	Patients, n (%)	
Grade 1 Fever	1	(12.5%)
Grade 1 Nausea	1	(12.5%)
Grade 1 Hypotension	1	(12.5%)
Grade 1 Fatigue	1	(12.5%)
Grade 1 Chest discomfort	1	(12.5%)

Figure 1. Survival time from the recurrence of breast cancer until death or study follow-up

Figure 2. Survival time from the intrapericardial CBDCA administration until death or study follow-up

Figure 3. Survival time from the recurrence of breast cancer until death or study follow-up

No authors report any conflicts of interest.