

Characteristics and survival impact of PMNL-predominant malignant pleural effusion

경북대학교 병원 호흡기내과

*서진아, 서혜원, 이재희, 차승익, 김창호

Background/Aims: In comparison with malignant pleural effusion (MPE) generally characterized by mononuclear leukocyte (MNL) predominance, polymorphonuclear leukocyte (PMNL)-predominant MPE has rarely been investigated and may be associated with a poorer prognosis. So the present study investigated the characteristics and survival impact of PMNL-predominant MPE secondary to lung cancer. **Methods:** This retrospective study included patients with MPE from lung cancer, which were classified into the PMNL- and MNL-predominant groups according to cellular predominance in the pleural fluid. Clinical, hematological, radiological, and pleural fluid data were compared between the groups, and the survival impact of PMNL predominance in MPE was evaluated. **Results:** Of the 193 MPEs included, 37 (19%) were PMNL predominance. Compared to the MNL-predominant group, the PMNL-predominant group showed significantly poorer patient performances ($p=0.001$), higher white blood cell counts ($p=0.009$), higher blood neutrophil-to-lymphocyte ratio ($p=0.046$), higher serum C-reactive protein ($p=0.003$), lower serum albumin ($p<0.001$), lower pleural fluid pH ($p=0.002$), and higher pleural fluid lactate dehydrogenase ($p=0.029$) levels. In contrast, most clinical and radiological findings, including the duration of symptoms, showed no significant intergroup differences. A shift toward MNL predominance was observed in only 38% of the PMNL-predominant patients who underwent repeat thoracentesis. Overall survival of the PMNL-predominant group was significantly shorter than the MNL-predominant group (Figure 1, $p=0.003$). **Conclusions:** PMNL predominance in MPE secondary to lung cancer may be observed in variable phases with respect to the duration of symptoms and the time of thoracentesis. Compared to MNL-predominant MPEs, PMNL-predominant MPEs were associated with more advanced stages and poorer survival outcomes.

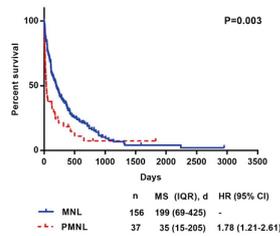


Figure 1. Kaplan-Meier survival curves of patients with polymorphonuclear leukocyte (PMNL)- and mononuclear leukocyte (MNL)-predominant malignant pleural effusion. MS = median survival; IQR = interquartile range; d = days; HR = hazard ratio; 95% CI = 95% confidence interval.