



# CA - 125

CA - 125 (>38.0C) (n=27) 45  
 (n=21), (n=16),  
 (n=1),  
 11 가 (n=18)  
 (n=16) (n=2)  
 가 가 CA -  
 125 가  
 : 24 (89%), (p<0.005).  
 4 (22%) 8 (29%), 7 (26%)  
 1 (6%), 0 (0%)  
 (P<0.005). 가 84%, 83% , 90%  
 (Kappa value: 0.84) CA - 125 306.5 U/ml  
 (21.3 - 1078), 38.0 U/ml (11.3 - 114.8)  
 가 (p<0.005).

CA - 125  
 1960  
 1995 0.8% 가 (2). 가 (3,  
 (1). 가 4, 5). CA - 125  
 가 가 (6).  
 , CA - 125 가 가  
 가 가

125

CA -

47 (17-73 )

10 , 17

10 , 8

가

2

가

1990 1 1996 7

( >38.0C)

45

27

21

, 16

4 - 10 mm

가

. 11

. 1

18

가

Chi - square test

Kappa statistics

CA - 125

(Centocor CA - 125 RIA kit)

1, 2, 6

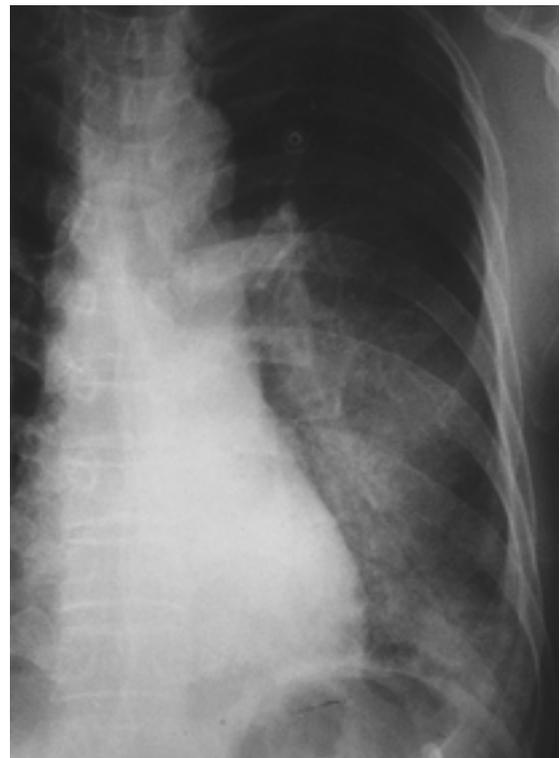
CA - 125

Student t - test

16

2

38 (16 - 84 )



**Fig. 1.** A 16-year-old man with tuberculous pneumonia. The initial chest radiogram shows mainly homogenous consolidation with cavitary lesion and volume loss (upward convexity of minor fissure) in right upper lobe (serum CA-125 value: 119.4 U/ml). Two radiologists made correct diagnosis.

**Fig. 2.** A 48-year-old man with community-acquired pneumonia. The initial chest radiogram shows only homogenous consolidation in left lower lobe (serum CA -125 value: 27.7 U/ml). Two radiologists made correct diagnosis.

(89%) , 27 24  
 4 (22%) 18  
 (p<0.005).  
 (Fig. 1, 2) 8 (29%) ,  
 1 (6%)  
 가 (p<0.005) . ,  
 7 (26%),  
 (p<0.005) (Table 1).  
 가  
 93%, 1  
 84% . 2 72%,  
 89%,  
 72%,  
 83%  
 90% ,  
 kappa value 0.84 (Fig. 3, 4).



**Fig. 3.** A 84-year-old woman with tuberculous pneumonia. The initial chest radiogram shows multifocal nodular densities in left upper lobe and multifocal nodular densities with focal homogenous consolidation in left lower lobe (serum CA-125: 109.9 U/ml). Two radiologists misdiagnosed with community-acquired pneumonia because of focal homogenous consolidation in the left lower lobe.

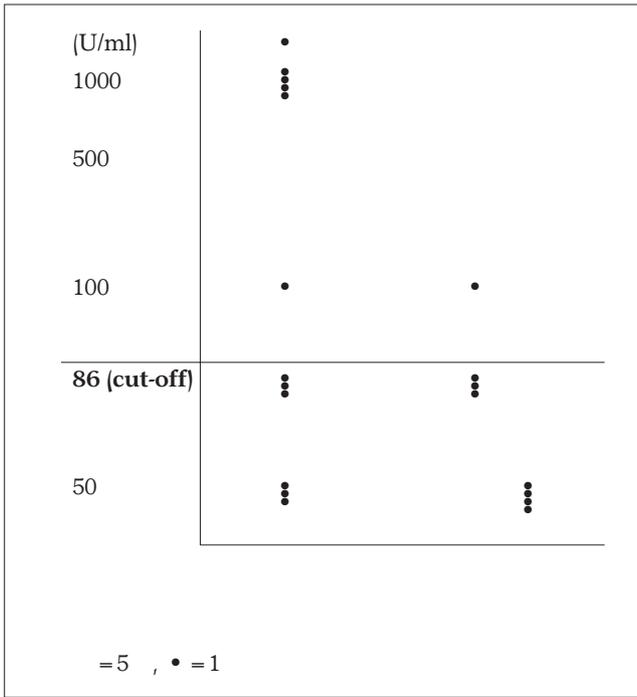
CA - 125  
 306.5 U/ml (21.3 - 1078) ,  
 38.0 U/ml (11.3 - 114.8) 가  
 (p<0.005).  
 CA - 125 cut - off value  
 2SD ( ) (86 U/ml)  
 17  
 (94%) CA - 125 cut - off value ,  
 21 (78%)가 cut - off value  
 CA - 125 cut - off value (86 U/ml)  
 95%, 84%  
 (Fig. 5).  
 CA - 125  
 cut - off value(86 U/ml)  
 , 6

**Table 1.** Comparison of Chest Radiographic Findings between Tuberculous Pneumonia and Community-Acquired Pneumonia

	Tuberculous Pneumonia (n=27)	Community-Acquired Pneumonia (n=18)
Nodular Consolidation	24 (89%)	4 (22%)
Cavitary Lesion	8 (29%)	1 (6%)
Volume Loss	7 (26%)	0



**Fig. 4.** A 57-year-old man with community-acquired pneumonia. The initial chest radiogram shows multifocal nodular densities in right upper lobe (serum CA-125: 22.1 U/ml) Two radiologists misdiagnosed with tuberculous pneumonia because of nodular densities.



**Fig. 5.** Serum CA-125 level in tuberculous pneumonia and community-acquired pneumonia

(65 U/ml)

가

가

(7, 8).

가

(8),

가

가

(8, 9).

(local progression), 2)

가

가

가

가

(8).

CT

(10)

가

(centrilobular nodule) 가 (branching linear pattern), (tree in bud), 가

(poorly defined nodule),

(interlobular septal thickening), (lobular consolidation)

(10).

가

가

26%

(11).

CA - 125

가

CA - 125가

(6, 11, 12).

CA - 125

가

가

가

가

CA - 125

가가

1. : 7 1996: 13
2. Chan CH, Cohen M, Pang J. A prospective study of community-acquired pneumonia in Hong Kong. *Chest* 1992;101:442-446
3. X
4. 1991;27(4): 535-539 mycoplasma
5. 1997; 36:247-252

1994;31

- (2): 273-277
6. CA-125 ; 1996;43(2): 159-163
  7. Palmer PES. Pulmonary tuberculosis: usual and unusual radiographic presentations. *Semin Roentgenol* 1979;14;204-243
  8. Lee KS, Song KS, Lim TH, Kim PN, Kim IY, Lee BH. Adult-onset pulmonary tuberculosis: findings on chest radiographs and CT scans. *AJR Am J Roentgenol* 1993;160:753-758
  9. Lee KS, IM JG. CT in Adults with tuberculosis of the chest: characteristic findings and role in management. *AJR Am J Roentgenol* 1995;164:1361-1367
  10. Im JG, Harumi I, Shim YS, et al. Pulmonary tuberculosis: CT findings-early active disease and sequential change with antituberculous therapy. *Radiology* 1993;186:653-660
  11. Dunnill MD. *Pulmonary pathology*. 2nd ed. Churchill Livingstone; London, 1988;443-454
  12. Santiago AC, Gershon YL. Elevated serum CA-125 secondary to tuberculous peritonitis. *Cancer* 1993;72(6):2016-2018
  13. Aoki Y, Katoh O, Nakanish Y, Kuroki S, Yamada H: A comparison study of IFN- , ADA, and CA-125 as the diagnostic parameters in tuberculous pleuritis. *Respir Med* 1994;88:139

## Differentiation of Tuberculous Pneumonia and Community-acquired Pneumonia: Usefulness of Chest Radiography and Serum CA-125<sup>1</sup>

Dong Man Park, M.D., Jeong Sook Kim, M.D., Young Hwan Kim, M.D.,  
Su Young Kim, M.D., Gham Hur, M.D.<sup>2</sup>, Soo Jeon Choi, M.D.<sup>3</sup>

<sup>1</sup>Department of Diagnostic Radiology, Sanggye Paik Hospital, Inje University College of Medicine

<sup>2</sup>Department of Diagnostic Radiology, Il-San Paik Hospital, Inje University College of Medicine

<sup>3</sup>Department of Internal Medicine, Sanggye Paik Hospital, Inje University College of Medicine

**Purpose:** To determine whether tuberculous pneumonia can be distinguished from community-acquired pneumonia on the basis of chest radiographic findings only and the diagnostic utility of differences in serum CA-125 levels.

**Materials and Methods:** Forty-five patients with a high fever (>38.0 C) in whom chest radiography revealed lobar consolidation were retrospectively studied. In 27 cases, the presence of acid-fast bacilli in sputum (n=21), the isolation of *Mycobacterium tuberculosis* from bronchoscopic biopsy tissue and sputum cultures (n=16), and improvement in the findings of serial radiography and in clinical symptoms during antituberculous therapy (n=1) led to a diagnosis of tuberculous pneumonia. A diagnosis of community-acquired pneumonia (n=18) was based on improvement in the serial radiographic findings obtained during antibacterial therapy (n=16), and the isolation of bacteria from sputum and pleural fluid culture (n=2). On the basis of independently analysed findings, radiologist determined the presence or absence of nodular density, cavitory lesions and loss of lung volume, while two radiologists differentiated between tuberculous pneumonia and community-acquired pneumonia.

**Results:** Initial chest radiographs of tuberculous pneumonia revealed nodular density in 89% of cases, cavitory lesions in 29%, and loss of lung volume nodular density was in 26%, while those of community-acquired pneumonia demonstrated nodular density in only 22%, cavitory lesions in 6%, and loss of lung volume in none was a significant statistical difference in nodular density, cavitory lesions and loss of lung volume ( $p < 0.005$ ). The average serum CA-125 level in tuberculous pneumonia was 306.5 (range, 21.3 - 1078) U/ml, whereas the average level in community-acquired pneumonia was 38.0 (range, 11.3 - 114.8) U/ml ( $p < 0.005$ ).

**Conclusion:** Initial chest radiography can differentiate between tuberculous and community-acquired pneumonia on the basis of nodular density, cavitory lesions and loss of lung volume and differences in CA-125 levels also provide a useful means of differentiating between these pneumonias.

**Index words :** Tuberculosis, pulmonary  
Lung, infection  
Lung, radiography

Address reprint requests to : Jeong Sook Kim, M.D., Department of Diagnostic Radiology, Inje University Sanggye Paik Hospital  
761-1 Sanggye-7dong Nowon-gu Seoul 139-707 Korea.  
Tel. 82-2-950-1182 Fax. 82-2-950-1220