

1980 1990

=Abstract=

**A comparison of causes of fever of unknown origin  
between the 1980s and the 1990s**

Young Keun Kim, M.D., Myoung Soo Kim, M.D., Kkot Sil Lee, M.D.,  
Ae Jung Huh, M.D., Joon Sup Yeom, M.D., Sung Kwan Hong, M.D.,  
Kyung Hee Chang, M.D., Young Goo Song, M.D. and June Myung Kim, M.D.

*Department of Internal Medicine, Yonsei University College of Medicine, Seoul, Korea*

**Background** : Physicians find fever of unknown origin (FUO) a difficult problem to solve. Analysis of the causes of FUO may be useful in the diagnosis of FUO. We investigated the causes of FUO in the last two decades from 1980 to 1999 and compared the two decades to seek for a trend of changes of the causes of FUO.

**Methods** : Among 854 patients diagnosed as FUO on discharge, we retrospectively reviewed 278 patients compatible with the Petersdorf's criteria through inpatient and outpatient medical records.

**Results** : There were 144 (51.5%) men and 134 (48.2%) women. Among the 98 patients in the 1980s, infectious disease was the cause in 37 (37.8%) patients, collagen vascular disease in 17 (17.3%), malignancy in 8 (8.2%), miscellaneous in 11 (11.2%), and unidentifiable cause in 25 (25.5%) patients. Among the 180 patients in the 1990s, infectious disease was the cause in 45 (25.0%) patients, collagen vascular disease in 37 (20.5%), malignancy in 34 (18.9%), miscellaneous in 45 (25.0%), and unidentifiable cause in 19 (10.6%) patients. According to the order of frequency, the causes of infectious disease were pulmonary tuberculosis (19.4%), extrapulmonary tuberculosis (8.2%), liver abscess (4.1%) in the 1980s and extrapulmonary tuberculosis (17.2%), pulmonary tuberculosis (4.4%), liver abscess (1.1%) in the 1990s. The diagnostic methods for evaluation of FUO were culture (45.6%), radiology (17.6%), serology (16.2%), and biopsy (10.3%) in the 1980s and radiology (31.5%), biopsy (26.9%), culture (21.5%) and serology (20.0%) in the 1990s.

**Conclusion** : Among the causes of FUO, infectious disease decreased and collagen disease and malignancy increased with time. The most common cause of infectious disease was pulmonary tuberculosis in the 1980s but extrapulmonary tuberculosis in the 1990s. Use of radiology and biopsy as diagnostic methods for FUO increased.(Korean J Med 61:546-552, 2001)

**Key Words** : Fever of Unknown Origin (FUO)

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• : 2001 7 3  
• : 2001 9 21  
• : , 134, (120-752)  
E-mail : jmkim@yumc.yonsei.ac.kr

1961 Petersdorf <sup>2)</sup> 38.3 가  
 3 , 1

가

2-15) 1.

Petersdorf<sup>2)</sup>

1980	98 (35.3%)
1990	180 (64.7%)
1980	51 (19.8%)
1990	93 (37.5%)
1980	47 (18.1%)
1990	87 (34.4%)

1, 17-19) ± 4.1 (20-74 ) 1980 47.9 ± 3.9 , 1990 50.7 ± 4.3 .

3, 6, 10, 11, 13, 16) 2.

가 가, 1980 98 37 (37.8%), 17 (17.3%), 8 (8.2%), 11 (11.2%), 가 25 (25.5%) . 1990 180 45 (25.0%), 37 (20.5%), 34 (18.9%), 45 (25.5%), 가 19 (10.6%) ( 1).

5, 7, 10-12, 15) , 1, 2 3

6, 8, 10, 13, 14) .

1981 1999 1980 19.4% 가 , (9.2%), 1990 (8.2%), (5.1%) 1990 17.2% 가 , (12.8%), (11.7%), (4.4%) ( 1).

1981 1 1999 6 1980 19 (9.2%), 8 (21.6%), 4 (10.8%), 3 (8.1%), 2 (5.4%), Petersdorf<sup>2)</sup> 1 (2.7%) 1990 31 (68.9%), 8 (17.8%), 2 (4.4%), 2 (4.4%), 1 (2.2%), 1981 1 1 (2.2%) ( 1).

1990 12 1980 1991 1 1980 1999 6 1990 , 9 52.9%, 4

**Table 1. The causes of fever of unknown origin in the 1980s and the 1990s**

Diseases	No. of cases (% of total)	
	1980s	1990s
<b>Infectious diseases</b>	37 (37.8)	45 (25.0)
Extrapulmonary tuberculosis	8 (8.2)	31 (17.2)
Pulmonary tuberculosis	19 (19.4)	8 (4.4)
Liver abscess	4 (4.1)	2 (1.1)
Endocarditis	2 (2.0)	2 (1.1)
Others	4 (4.1)	2 (1.1)
<b>Collagen diseases</b>	17 (17.3)	37 (20.5)
SLE <sup>*</sup>	9 (9.2)	21 (11.7)
AOSD <sup>†</sup>	1 (5.9)	6 (3.3)
Rheumatoid arthritis	4 (4.1)	6 (3.3)
Takayasu's arteritis	2 (2.0)	3 (1.7)
Others	1 (1.0)	1 (0.6)
<b>Malignancies</b>	8 (8.2)	34 (18.9)
Lymphoma	5 (5.1)	23 (12.8)
Acute leukemia	2 (2.0)	5 (2.8)
Metastatic carcinoma	1 (1.0)	4 (2.2)
Others	0 (0.0)	2 (1.1)
<b>Other diseases</b>	11 (11.2)	45 (25.0)
Drug fever	5 (5.1)	31 (17.2)
Endocrine disease	2 (2.0)	5 (2.8)
Pulmonary embolism	1 (1.0)	3 (1.7)
Inflammatory bowel disease	1 (1.0)	2 (1.1)
Others	2 (2.0)	4 (2.2)
<b>Undiagnosed</b>	25 (25.5)	19 (10.6)
<b>Total</b>	98 (100.0)	180 (100.0)

\*SLE, systemic lupus erythematosus; †AOSD, adult onset Still's disease

No. of cases (% of total)		
Diagnostic method	1980s	1990s
Culture	31 (45.6)	28 (21.5)
Radiology	12 (17.6)	41 (31.5)
Serology	11 (16.2)	26 (20.0)
Biopsy	7 (10.3)	35 (26.9)
<b>T total</b>	<b>68 (100.0)</b>	<b>130 (100.0)</b>

**Table 2. The diagnostic methods for finding out the cause of FUO in the 1980s and the 1990s**

(17.3%), 9 (9.2%), 6 5% 8) 1981 1983  
(6.1%) , 1990 57 1987 1992  
(31.7%), 43 (23.9%), 25 , ,  
(13.9%), 23 (12.8%) ( 2). 29%, 24%, 24%, 20%,

17%, 16%  
1980 1990

가 , 1961 Peters- 37.8% 25.0%  
dorf 2) , 8.2% 18.9% 가 . 가

1, 9, 15-18)

8, 20)

1, 17-19)

38.3 19) 1980 1990  
, 3 , 1 17.3% 20.5% 가

Petersdorf Beeson 2) 8)

가

1980 1990 가 46% 14) 40

25-45% 가 23-40%, 1, 17-19) 1980  
1990 37.8%, 25% 가

5, 6, 10-12, 16)

가

가

6, 10, 16)

가

가

5, 11, 12,) Dekleijin 3) Kohno 15) 1990 1, 3-6, 10, 15, 16, 19)

7-9, 20)

7, 8)

Dekleijin 3) 25.7%, 24%, Kohno 15)

32%, 31% 23.7% 1980

51.4% 가

Cunha 19) 가 가 Paul 가 1980 17.8% 21.6% 1990

1)

가

68.9%

7)

1975

1980

가

80% 7%,

20) 8.1% 4.4% , , , 가  
 가 3 1. 3. 5. 6)  
 가 19)  
 가 1980 , 1990  
 가 1980 45.5%, 68.8% 가  
 10.8% 1990 4.4% 1 , 가  
 가 Petersdorf 1950 1970 가  
 1. 2) 15% 9% 가  
 15- 24% 1. 3. 5. 6. 13) 가 9- 30% 1. 3. 5. 6) 21) 10%  
 1970 5% 1980 21- 30% 8)  
 20% 가 7. 8)  
 1980 17.3% 1990 20.6% 1980  
 가 가 25.5% 1990 10.6% 가  
 가 1980 5.9%, 1990 가 가  
 16.2% 가 3 가 Powel<sup>6)</sup> 가 50%  
 가 Molina- Gamboa<sup>10)</sup> 가  
 1) 가 12% 63%, 17%,  
 Petersdorf 1950 1970 가 가  
 19% 31% 가 8)  
 1. 2) 7- 24% 가 1980  
 1. 3. 5. 6. 13) 1970 7% 45.6% 1990 21.5%  
 1980 16% 가 가 가  
 7. 8) 1980 가 가 1980  
 8.2% 1990 18.9% 가 16.2%, 1990 20.0% 가 가  
 가 10.3% 1990 26.9% 가 가  
 가 가  
 가 1980 17.6% 1990 31.5%

가 가 . : 1981 1 1999 6

22)

Year	Number of Cases	Percentage
1980	278	86%
1990	854	
1980	134	(48.2%)
1990	144	(16.7%)
1980	98	(35.2%)
1990	17	(1.9%)
1980	37	(13.3%)
1990	11	(1.3%)
1980	180	(64.8%)
1990	45	(5.3%)
1980	37	(13.3%)
1990	34	(3.9%)
1980	19	(6.8%)
1990	4	(0.5%)
1980	8	(2.9%)
1990	31	(3.6%)
1980	2	(0.7%)
1990	8	(0.9%)
1980	18	(6.5%)
1990	45	(5.3%)
1980	37	(13.3%)
1990	34	(3.9%)
1980	19	(6.8%)
1990	4	(0.5%)
1980	8	(2.9%)
1990	31	(3.6%)
1980	2	(0.7%)
1990	8	(0.9%)
1980	18	(6.5%)
1990	45	(5.3%)
1980	37	(13.3%)
1990	34	(3.9%)
1980	19	(6.8%)
1990	4	(0.5%)
1980	8	(2.9%)
1990	31	(3.6%)
1980	2	(0.7%)
1990	8	(0.9%)

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