

Trichloroethylene

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Abstract

Exfoliative Dermatitis and Toxic Hepatitis Associated with Occupational Exposure to Trichloroethylene

Hong Jae Chae, Seong Kwan Lee, Kang Jin Lee, Jong Youl Kim¹⁾,
Seung-Chul Lee¹⁾, Dong Hyeon Shin²⁾, Jai-Dong Moon

*Department of Occupational and Environmental Medicine, Department of Dermatology¹⁾,
Department of Internal Medicine²⁾, Chonnam National University Hospital*

A 28-year-old male began working as a degreaser. The solvent used in the degreasing operation was trichloroethylene. Over the next month the man experienced fever, chills, and an erythematous skin rash and itching. At that time he had a marked elevation in his liver enzyme, with cholestasis. Over the next few days the rash persisted then peeled. There was an elevation of Ig E, and a positive patch test reaction to trichloroethylene. His dermatitis and hepatitis were considered to be mediated by a hypersensitivity mechanism.

Key Words : Trichloroethylene, Hepatitis, Exfoliative dermatitis.

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(Wexler, 1998).

Trichloroethylene 가

Trichloroethylene (Chlorinated hydrocarbon)

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(Wexler,

1998). (Ford, 가 4 14 20
 1995) 가
 Trichloroethylene : 가
 1974 Bauer
 : 2
 (Nomiyama, 1979; Phoon, 1984).
 trichloroethylene 1999 3 17 가
 trichloroethylene
 :
 : 37.7
 : O O, , 28
 :
 : 1999 3 17 가 (Fig. 1).
 trichloroethylene :
 , 19,400 /mm³(, 74.4%;
 가 가 . 4 12 17.1%; , 0.8%); , 14.4 g/dl
 AST, 850 U/L; ALT, 831



Fig. 1. Initial erythematous maculopapular rash.

U/L; r-GTP, 149 U/L; ALP, 177 U/L; LDH, mg/dℓ; , 3 mg/dℓ . Ig E 1,414
 1377 U/L; , 5.1 mg/dℓ; IU/ℓ 가
 , 3.9 mg/dℓ , 4.8 A , B , C
 g/dℓ; , 2.7 g/dℓ .
 PT, 15.7 (1.45 INR); aPTT, 31.4 :
 , 50 mg/dℓ; , 100

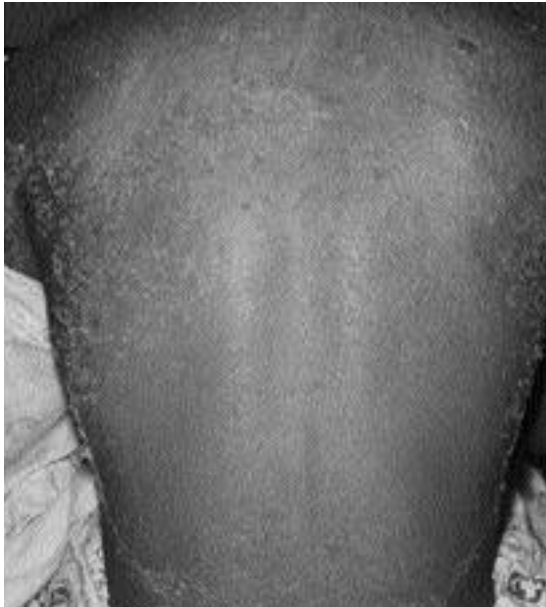


Fig. 2. Desquamation of skin.

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 :
 , , ,
 ,
 :
 ,
 38~38.5

prednisolone 60 mg

4 . 6
 가 가 ,

Figure 2

10

가

(Material Safety Data Sheet, MSDS)

13.1 mg/dℓ . AST ALT 6

(Fig. 3).

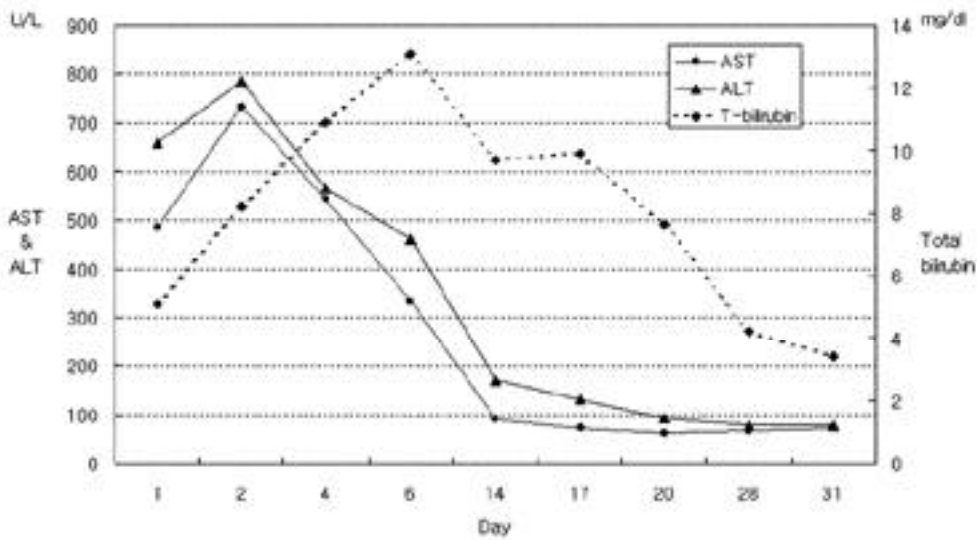


Fig. 3. The changing pattern of the AST, ALT and total bilirubin level during the admission.

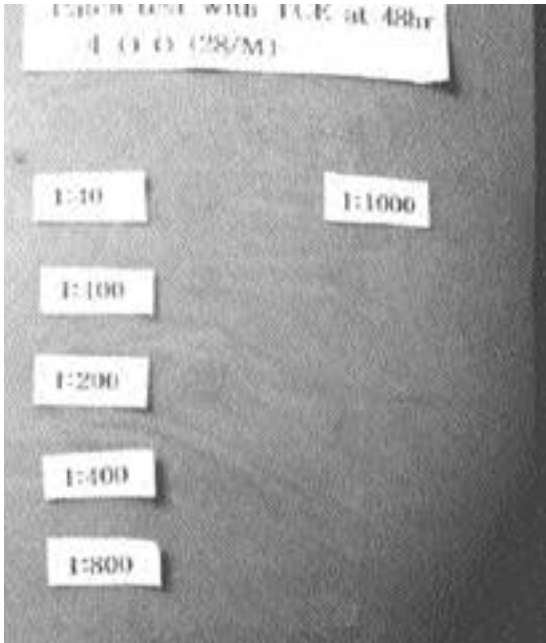


Fig. 4. Result of patch test by trichloroethylene.

12
 가 14 가
 3 가
 4
 trichloroeth
 ylene
 (Fig. 4,
 Table 1).
 2
 가:
 2 가

Table 1. Results of patch testing in the patient

Substances		After 48 hr
Trichloroethylene	2.5 % with olive oil	+
Trichloroethylene	1 % with olive oil	+
Trichloroethylene	0.5 % with olive oil	+
Trichloroethylene	0.25 % with olive oil	+
Trichloroethylene	0.125 % with olive oil	-
Trichloroethylene	0.1 % with olive oil	-



Fig. 5. Degreasing processing with trichloroethylene.

(Material Safety Data Sheet, MSDS)

(Wexler, 1998).

Buer Rabens(1974) Los Angeles

3

가

trichloroethylene

. Phoon (1984) Singapore

Steven-Johnson

5

. Tri-

가

chloroethylene 2~5

(Fig. 5).

. Nakayama (1988)

trichloroethylene

trichloroethylene

2

가

trichloroethylene

trichloroethylene trichloroethanol

가

. Bond(1996)

trichloroethylene

trichloroethylene

가

가가

(1985)

trichloroethylene TWA 157.92 ppm

30

5%

50 ppm

trichloroethylene

(1999)

Trichloroethylene

trichloroethylene

trichloroethanol

trichloroethylene

trichloroethylene

trichloroethylene

cytochrome P450

가

(Trichloroacetic acid)

가

(Trichloroethanol)

trichloroethylene

가

Nakayama

(Clayton , 1994).

(1988)

(1999)

Naka-

yama (1988) 4

100 ppm

trichloroethylene

10% 25%

5%, 0.05%

0.005% trichloroethanol

trichloroethanol

. Jeanne Ginger(1999)

5

8

trichloroethylene

가

Griffin (2000) 2000. 9. 28.

trichloroethylene CD4(+) T 168

cell 가 , 1999

trichloroethylene Trichloroethylene 1 1999;5(1):59-64.

가 157.92 ppm

50 ppm Trichloroethylene 1 1985;23(6):785-9.

가

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trichloroethylene Ig E가

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