

J. Comm. Med. 1992, Vol. 5, No. (2)

THE PREVALENCE OF CONTACT DERMATITIS AMONG MALE WORKERS IN AN ENGINEERING FACTORY-IRAQ

*Hassan Alwan Hussien, **Hikmet Jamil,

*Al-Qadissiya State Establishment, **Dept. of Commun. Med. Coll. of Med. Uni. of Baghdad.

Key Words: Contact dermatitis, Male workers, Engineering factory, Iraq.

التهاب الجلد التماسي عند الذكور العاملين في مصنع هندسي- العراق

الخلاصة:

من خلال فحص 1098 شخص من الذكور الذين لهم خدمة خمس سنوات فأكثر في العمل، تبين أن نسبة انتشار التهاب الجلد التماسي كانت 9.3% وكان العاملون في قسم صناعة البلاستيك أكثر تعرضاً (28.9%). أن أعلى نسبة من الإصابات وقعت في اليدين (85.3%). لم نجد فروق معنوية بين الإصابات بالتهاب الجلد التماسي وأعمار العاملين أو مدة خدمتهم ولكن مثل هذه الفروق وجدت مع اختلاف المستوى العلمي للعاملين.

SUMMARY:

The prevalence rate (PR) of contact dermatitis (CD) among 1098 male workers with five and more years of continuous employment was found to be 9.3%. CD was more prevalent in the hands (85.3%) and among those working in plastic moulding department (28.9%). No significant association was found between CD and age groups or years of employment while such association was found between CD and different educational levels of the workers.

INTRODUCTION:

Contact dermatitis (CD) is the most frequently seen occupational skin disease in several countries such as U.S.A⁽¹⁾, U.K⁽²⁾, Finland⁽³⁾, Spain⁽⁴⁾, Singapore⁽⁵⁾, Nigeria⁽⁶⁾, and Egypt^(7,8). The prevalence rate (PR) of CD reported from different countries and in different occupational groups ranged from 2% to 19.6% (9-13). The PR of CD appears to be particularly high in the chemical and metal industries⁽¹⁾, 80% of CD are

thought to be of irritant type. However, with patch testing technique and with increasing array of chemicals, the incidence of allergic CD may reach 50% of all CD^(16,17). The PR of CD in various samples of Iraqi industrial population vary from 53% among workers in chromium department in Iraqi Tanning Factory in Baghdad⁽¹⁸⁾ and 9.6% among workers in detergent and soap department of Vegetable Oil Company in Baghdad⁽¹⁹⁾. As few studies on CD among Iraqi industrial population is published, this study is conducted among Iraqi engineering workers.

MATERIAL AND METHODS : (20)

1- 1098 male workers with five and more years of employment at AL-Qadissiya State Establishment (Factory) were studied, the factory is specialized in production of small and medium mechanical spare parts produced by different technology such as milling, turning, drilling, grinding, wire cutting, pressing, heat treatment, surface treatment,

forging and plastic moulding.

2. The workers were categorised according to the seven established department, these workers were exposed to chemicals such as zinc and chromate.

3. Each worker was required to give his reply to the specific questionnaire designed for this study.

4. Only those having CD at the time of study (1991-1992) were included. Tests such as patch test was not performed because the study is concerned with the PR of CD, in general and not a specific type, therefore the diagnosis of CD was based on full history and clinical examination and knowing the potential hazards involved in the process of manufacturing to which the workers are exposed. The skin was examined in natural day light.

Particular attention was paid to the morphology of primary lesions and to the distribution of the lesion in the body.

5. ESR was measured by using the wester-gren's method which been selected as the method of choice and the standard method by the National Committee for clinical laboratory standard (20,22).

RESULTS:

The total number of CD detected from the study group (1098) was 102 with a PR of 9.3%. Table 1 shows

ESR level, but no significant association was found between CD and years of employment. Table 2 shows the distribution of PR of CD according to the position on the body.

DISCUSSION:

A cross sectional epidemiological survey was conducted on 1098 male employees who spent more than five continuous years in an Engineering factory. The PR of CD was 9.3% this rate is higher than that reported by AL-Kateeb and AL-Safadin in Syria⁽²³⁾ who found 5% of Syrian textile workers had CD but lower than that found by Ismail (53%) among workers in a chromium Dept in an Iraqi tanning factory in Baghdad and less than the PR (13%) reported by AL-Rawi⁽²⁴⁾ among workers in Falloga cement factory. Aziz⁽²⁵⁾ found that 15.7% of male workers in 17th july textile factory- Baghdad had CD which was higher than our present finding. Our results are comparable with that of Elias⁽¹⁹⁾ who found that the crude PR of CD was 9.6% among workers in the detergent and soap department of vegetable oil company- Baghdad. There was a significant association between CD and educational level of the workers, which could be explained by different levels of understanding the relation between personal hy-

732

Table 1. The association between contact dermatitis (CD) and other variables.

The Variables	Total No. of workers	CD		d.f.	χ^2
		No.	PR ⁺		
age (years)					
20-29	583	61	10.5	3	3.6
30-39	359	32	8.9		
40-49	125	8	6.4		
50+	31	1			
Total	1098	102	9.3		
Educational level					
Illiterate	44	0	0	4	14.6 ^{xx}
Read and write	26	2	7.7		
Primary school	479	33	6.9		
Secondary sch.	381	50	13.1		
Other	158	17	10.1		
Years of employments					
5-9	654	72	11.0	3	6.6.
10-14	159	10	6.3		
15-19	182	15	8.2		
20+	103	5	4.9		
Departments					
Production	646	65	10.1	6	25.1 ^{xxx}
Technical	94	7	7.4		
maintenance	106	8	7.5		
General Service	70	1	1.4		
Adminstration	71	6	8.5		
Plastic moulding	38	11	28.9		
surface treatment	73	4	5.5		
xx P<0.01	+PR=	Prevalence rate			
xxx P<0.005					

Table 2. The distribution of contact dermatitis according to the position on the body.

position	No. of workers with CD	PR ⁺
Hand	87	85.3
Forearm	46	45.1
Feet	26	25.5
Face and Neck	17	16.7
Others	14	13.7

* The denominator for calculation prevalence rate (PR) was always 102. Since many workers had more than one position affected on the body.

(1.4%). This interplant variation was statistically significant (Table1). The most haz-

ardous industrial process that leads to the greater exposure to irritating chemicals was found in the plastic moulding department. There, fiber glass and acrylatec materials were used which might act as extreme irritants or sensitizers⁽¹⁾. In the production department the PR is relatively high (10.1%) when compared with other departments. An explanation could be put on the basis that workers in that department were usually exposed to cutting fluid which is a well known irritant⁽⁴⁾. Such CD in all department could have been much lower if personal protective devices, personal hygiene and better house keeping were considered seriously and kept optimum. It is well known that CD affects mainly hands, and in our investigation, hands were involved in more than 80% of cases, this finding is comparable with that of Jamil et al⁽²⁷⁾.

Recommendations to the top management of the factory are, given on the following:

- 1- Every worker should know about the hazards of the materials with which he deals.
- 2- Washing facilities should exist in each department especially the plastic moulding department.
- 3- Personal protective equipment must be available.
- 4- Pre and periodic medical examination to exclude vulnerable persons to CD.

ACKNOWLEDGEMENT :

Our deep gratitude is given the Engineer Dr. Amir AL-Obiedi chairman of MPA, to Mr. Abud Alamir Abud AL-Pazak Director General AL-Qadissya's state establishment and to all the staff in it.

conducting this work.

REFERENCES:

- 1-Rycroft, R.J.G. Occupational dermatosis in Rook A., wilkinson D.S. Ebing F.J.G, Champion R.H., Burton J.L., Text Book of Dermatology 4th. edition, Blackwell Scientific Publication 1986, (1): 569-85.
- 2- Waldron, H.A. lecture notes on occupational medicine. 2nd edition. Blackwell Scientific Publication, 1979, p: 159-7-173.
- 3- Jacob, A., Anderson, R., knox, J.D.E. Diagnosis of occupational dermatitis by general practitioners and employment medical advisors. a pilot study. J. Royal College of General practioners, 1988, 38/310: 215-216.
- 4- Alomar, A.L., Salazar, C., Romaguera, C. Occupational dermatoses from cutting oils. Contact dermatitis, 1985, 12: 129-138.
- 5- Lee, H.S., Goh, C.L. Occupational dermatitis among chrome platers. Contact Dermatitis. 1988, 18: 89-93.
- 6- Olumide, Y.M. Contact dermatitis in Nigeria. Contact dermatitis. 1985, 12: 241-246.
- 7-EL-Batawi, M.A. National problems of industrial health and needs for a country wide planning. J. Egypt Public Health Assoc. 1984,39:1-15.
- 8- Noweir, M.H., Abu-Zeids, S., Moselhi, M., El-Faragy, A. Study of the dermatological effect of exposure to cement among workers in the building construction trades. J. Egypt Public Health Assoc. 1981, 56:

735

Med. Baghdad. 1985, 27(1) 41-50.

26- Kirkeby, O.J., Risosor, J.V., Vikland, R. Significance of a high ESR in general practice. Br. J. clin. pract. 1989, 43/7: 257-4 (abstract).

27- Jamil, H. and Haboubi, G. Contact Dermatitis among self-employed workers in Bagdad - City J. Fac. Med. Baghdad, 1992, 34(3), 363-370.