題名:Occupational Epidemiology Study of Dyestuff Manufacturing Workers. 國立台灣大學博士學位論文。

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摘要:BACKGROUND: Past studies have analyzed individual jobs in dyestuff factories, materials manufactured and handled, age at exposure, and the duration of exposure in factories as factors related to the occurrence of urothelial tumors. None of these studies was based on long-term observation, and the factors involved in the occurrence of urothelial tumors remain controversial. In this study, various factors that may affect the occurrence of urothelial tumors in dye workers were assessed by multivariate analysis. METHODS: Three hundred and sixty-three workers in nine member factories of the Dyestuff Industrial Cooperative Association were included the study. Factory A is a large dyestuff chemical factory in Wakayama City with 218 dye workers. The other eight smaller factories employ a total of 145 dye workers. Correlations of tumor occurrence with a variety of factors, such as dyestuff intermediates manufactured and handled, types of job in the factory, age at the beginning of occupational exposure, and the duration of exposure were examined by multivariate analysis using multiple logistic models. RESULTS: Urothelial tumors were found in 58 (16.0%) of the 363 dye workers in the nine member factories of the Cooperative Association examined in the present study. The incidence in workers in Factory A, 5.5% (12 patients), was significantly (P < 0.01) lower than the overall incidence, while that in the eight small factories, 31.7% (46 patients), was significantly (P < 0.01) higher than the overall incidence. The risk factors significantly related to tumor occurrence in the 363 dye workers were benzidine (odds ratio, 8.302) as a

dyestuff intermediate, manufacturing work (odds ratio, 4.631), and a long period of exposure (odds ratio, 1.018). Correlations of the tumor occurrence with the various factors were examined by multivariate analysis using multiple logistic models. In the total of 363 workers, benzidine as an intermediate (P < 0.05), manufacturing work (P < 0.01) and the duration of exposure (P < 0.01) were found to have contributed to the urothelial tumor occurrence. In Factory A, benzidine as an intermediate (P < 0.01) and duration of exposure (P < 0.05) contributed significantly to tumor occurrence. CONCLUSIONS: 1) The manufacturing and handling of benzidine and duration of exposure contribute significantly to the occurrence of occupational urothelial tumor, the former more strongly than the latter; 2) the contribution of different job types to tumor occurrence may be dependent upon the industrial health and safety practices in each factory.