

CHRONISCHER SCHADIGUNGEN DURCH
UMWELTVERUNREINIGUNGEN - Lachnit V. - Kolingasse
10, Wien - WIENMED WCHR 1972 122/4 (43-49)

Substances which may on occupational exposure at fairly high concentrations cause disease or damage health are discussed. Of the many trace elements in inhaled air most are present in such small quantities that damage to health is hardly likely, even in the vicinity of industrial plants etc. Certain metals such as nickel and cadmium merit greater attention in the future, however. Despite their low atmospheric concentration, so-called neighborhood cases have already been reported. Lead is one of the commonest and most severe atmospheric pollutants. Pollution by lead has been largely contributed to by the use of petrol containing lead. Longterm studies show that the maximum allowable concentration of lead may reduce the life expectancy of laboratory animals. A toxicological effect is also suggested by the reduced activity of ALA dehydratase observed at such lead levels. This may be interpreted as an early sign of the effect of lead on this enzyme, important in synthesis of heme. To prevent further increase of lead levels in the nonoccupationally exposed population a rigorous reduction or elimination of the lead content in petrol should be enforced. Some air pollutants have decreased recently in some countries, due to legal action; this has not occurred with asbestos fibers, which are extremely dangerous. The presence of so-called asbestos bodies in the lungs of nonoccupationally exposed people indicates the necessity of further studies. Whether these bodies which give a positive reaction for iron are indeed for the major part asbestos bodies can only be decided by comparative serial investigations. Poisoning with organic mercury compounds resulting from consumption of mercury polluted fish has occurred not only in Japan (Minimata disease) but also in Scandinavia and Canada. This has led to an investigation of the metabolism of these substances. Organic mercury compounds, especially methyl Hg compounds, have a particular affinity for the central nervous system. Determination of mercury in plasma or urine in cases of poisoning by these compounds yielded quite low Hg levels, though in whole blood or organs the level was much higher. For this reason mass poisonings have frequently been interpreted incorrectly. Prevention must consist of prepurification of waste water of the appropriate industrial plants.

423. Health aspects of nitrates in drinking water - DEVELOPMENTS IN WATER QUALITY RESEARCH - GRUMBER N. and Shuval H.I. - ANW ARBOR SCIENTIA, 1970 (89-90)

The danger of water contamination by nitrate salts is dealt with in this article. Recent developments have created the need to embark on a study to determine if present nitrate concentrations in drinking water are having any detrimental effects on the population exposed. In addition, the authors felt that a basic reevaluation of the nitrate standard in drinking water was called for, since this standard was originally based on very limited toxicological and epidemiological information and has been subject

to criticism for some years. Of particular concern has been the suspicion that a form of subclinical chronic methemoglobinemia might exist in infants in those areas with moderately high nitrate concentrations in drinking water. Consequently, the present state of knowledge concerning nitrate methemoglobinemia is also reviewed.

424. Health aspects of arsenical in the environment - Lisella F.S., Long K.R. and Scott H.G. - Dept. Prev. Med. Environm. Hlth. Coll. Med., Univ. Iowa, Iowa City, Ia. 52240 - JENVIRONHEALTH 1972 34/5 (511-518)

In a literature review on arsenical compounds, this paper points out the possible hazards to human health and the environment resulting from their use. The major headings of this review include: the contemporary uses of arsenicals, illness and death associated with arsenic, arsenicals in the environment, and analytical procedures for the detection of arsenic.

425. Role of cadmium in human and experimental hypertension - Thind G.S. - Dept. Med., Sch. Med., Univ. Pennsylvania, Philadelphia, Pa. 19146 - JADR POLLCONTROL ASS. 1972 22/4 (287-270)

Acute and chronic studies performed in the authors' laboratory in normal rabbits, dogs, human control subjects, and patients with hypertension are reviewed. Cadmium, a common contaminant of air, water, and food, produces persistent hypertension in the rabbit and dog. The pervasive metal is predominantly deposited in the kidney and liver, and to a lesser extent in the blood vessels of the cadmium hypertensive rabbits. Vascular responsiveness to angiotensin in the cadmium hypertensive aortic strips was significantly lower than that of the strips obtained from control normotensive rabbits. Cadmium hypertensive aortic strips also developed significantly lower passive tension on step wise increase in the original length of the strips (strain). Administration of cadmium acetate directly into the renal artery, preceding the injection of the vasopressor (angiotensin, epinephrine or norepinephrine), resulted in a dose related reversible inhibition of the vasopressor induced renal vasoconstriction. It is probable that significant pathophysiological changes in experimental cadmium hypertension would occur in the vascular system and the kidney, where cadmium deposition was the greatest. Mean plasma cadmium levels were significantly higher in patients with hypertension. Plasma zinc levels, however, were significantly lower only in hypertensive patients with renovascular and renal parenchymal disease but not in essential hypertension patients. A program of detailed epidemiological studies and public health measures is needed for further definition of the role of cadmium in idiopathic human hypertension.

426. Alkyl mercury poisoning in humans. Report of an outbreak - Pierce P.E., Thompson J.F., Likosky W.H. et al. - 845 Central Ave, Albany, N.Y. 12206 - JAMERMEDASS 1972 220/11 (1439-1442)

Three members of a family of nine that ingested mercury contaminated pork became ill

so they have vaccinated council staff against influenza in the autumn. It has not been possible accurately to assess the value of the procedure, but last winter's figures are of some interest though the number are small. Difficulties arose in obtaining vaccine against the Hong Kong strain in the autumn of 1968, and a monovalent vaccine did not arrive until January 1969. As the expected epidemic had not yet materialized it was decided to vaccinate those who were willing. In the autumn of 1969 vaccination again was offered with a bivalent vaccine. In the first 25 vaccinated persons there was an unduly high proportion complaining of minor side effects, and the dose for the remaining 87 was reduced from 1 ml. to 0.5-0.75 ml., and no further trouble was experienced. During the period 16 December 1969 to 27 January 1960 an outbreak of influenza occurred as part of the national epidemic with a peak locally in early January, when claims for sick benefit reached a weekly figure of approximately 450% above the seasonal average. Strains of the Hong Kong variant of influenza virus A2 were isolated in the area. Returns from councils of absence owing to illness, believed to be influenza, during December and January were as follows: Unvaccinated 164, off sick 41; vaccinated once only 27, off sick 7; vaccinated twice 85, off sick nil. From this it will be seen that there is no difference in the absentee rate of those who were unvaccinated from those who received one dose only in November 1969. In the case of those who received two doses there were no absences, and this is statistically significant. Although one cannot draw any firm conclusion because of the small number who received one dose only, and in 23 a reduced dose, the authors think it seems prudent to advise an initial course of two doses in the previously unvaccinated and where there has been a significant change in the strain of the A2 virus.

15. CARCINOGENESIS

921. World maps of cancer mortality rates and frequency ratios. Parts III and IV (conclusion) - Dunham L.J. and Bailor III J.C. - Nat Cancer Inst, Bethesda, Md. - *INDUSTRIAL MED.* 1970 39/6 (37-53)

This is a continuation of a series which includes 16 maps of cancer mortality ratios and frequency ratios, based on a review of cancer data by geographic areas. More than 100 such areas are included. The data are recorded on maps for the following cancers in males: oral cavity and pharynx, esophagus, stomach, intestines and rectum, liver, larynx, lung, and bronchus, prostate, urinary bladder, and leukemia. Data for females are given for the following sites of cancer: oral cavity and pharynx, esophagus, intestines and rectum, breast, and uterine cervix. The data are arranged in sequence by International List numbers, with males placed before females where both sexes are included. The present publication is adapted from a longer article published in the *Journal of the National Cancer Institute*, Vol. 41.

922. Nasal cancer in woodworkers - *LANCET* 1970

2/7666 (253)

Editorial. Brief review of recent literature on this problem.

923. Carcinoma of pancreas due to effect of arsenic in a self employed farmer and vineyard tender - PANKREAS CA DURCH ARSENEINWIRKUNG BEI EINEM SELBSTANDIGEN LANDWIRT UND WEINGARTNER - Finzel L. - Dienstst., Staat. Gewerbeamt, Heilbronn - *ARBEITSGESUNDHEIT UND ARBEITSHYG.* 1970 5/9 (251-252)

During the years 1937 to 1939 a farmer had used (6 times per year) an arsenical insecticide. He developed warts, and in 1951 a skin carcinoma had to be excised. Lymph node metastases developed. He was under continuous treatment for cancer of the right side of the head and neck up to 1962. In 1966 jaundice developed, and he died in 1967. At autopsy a carcinoma of the pancreas was found. A relation between his disease(s) and his former occupational activities was accepted by the insurance company.

924. The future and lung cancer - Haddow A.J. - *HEALTH (Lond)* 1970 7/2 (23-25)

The impact of lung cancer on the population has changed enormously during this century and, to appraise what the future may bring, it is necessary to outline the events of the last few decades and the present position. Death rate from lung cancer is increasing. There is reason to anticipate that the rate in males will continue to increase for a number of years, and that mortality in women will soon begin to increase much more rapidly. In other words, it is believed that in the near future we shall face a much worse situation than at present. The age factor, and the role played by cigarette smoking are mentioned. The smoking habits and lung cancer mortality of women are 20 yr in arrears of the men and, if the present trend continues, they could, in the next 20 yr, reach the male mortality level. Smoking in men is still increasing, but not as rapidly as formerly; in women it is increasing very rapidly. Air pollution is not a major factor. Unless tobacco consumption can be checked, little can be done. The situation will almost certainly deteriorate further as smoking during school days is looked on more leniently today, with the result that more children leave school already confirmed and often heavy smokers. As the latent period seems to be between 15 and 20 yr, it may be expected that lung cancer cases among people in their thirties will be seen.

16. LABOR AND MORBIDITY

16.1. Circulatory system

925. Exercise and hypothermia in the rehabilitation of the coronary patient - Kavanagh T., Shephard R.J., Pandit V. and Doney H. - Rehab. Cent., Toronto - *ARCH. PHYS. MED.* 1970 51/10 (578-587)

A comparison was made of 2 rehabilitation programs for patients after coronary occlusion. The first consisted of progressive physical exercise under the supervision of a physician and