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Petah Tiqva, Israel). *Brit. J. Ind. Med.* 21(4), 299-303(1964) (Eng). In the manuf. of ZnO from old airplane batteries contg. 0.8% Hg as Zn amalgam, Hg vapors were released into a plant atm. at an estd. level of 0.3-2.0 mg./m.³. Severe poisoning developed in 7 out of 25 plant employees, with tremor as the leading symptom, Hg level (in γ /l.) of 103-212 in urine, 3.6-9.1 in the cerebrospinal fluid of 6 cases, and 82.7 of the 7th case. Initial D-penicillamine treatment was abandoned because of skin reactions; BAL was of no apparent benefit. The other workers (generally with less exposure) presented mild or no symptoms, with 89-360 γ Hg/l. urine on 1st examn. Andrew L. Reeves

A follow-up study of workers from an asbestos factory. P. C. Elwood, A. L. Cochran, I. T. Benjamin, and D. Scys-Prosser. *Brit. J. Ind. Med.* 21(4), 304-7(1964)(Eng). Men surviving 1st occupational exposure to chrysotile dust by 15 or more years show 2.3 times the expected mortality from pulmonary, bronchial, or pleural neoplasms, but there was only 1 case of mesothelioma. Andrew L. Reeves

Plasma porphyrins in lead workers. H. A. Waldron (Vauxhall Motors Ltd., Luton, Engl.). *Brit. J. Ind. Med.* 21(4), 315-17(1964)(Eng). In 50 workers exposed to Pb, total porphyrin (I) in plasma averaged 0.7, and coproporphyrins (II) in urine 10.6 γ /100 ml. (vs. 0.2 and 0.7 in controls); individual correlatability between the 2 values was poor. II comprised all of I in the plasma of controls but some protoporphyrin was present in the exposed group. Urinary I in 4 exposed workers also included compds. having R_f values of 0.65 and 0.33 (in $\text{Me}_2\text{CO}-\text{Et}_2\text{O}-\text{HOAc}$, 5:5:1), corresponding to porphyrins with 3 and 6 carboxyl groups, resp. These values are slightly lower than those of Eriksen (CA 47, 10603f). Total hemoglobin showed no difference, and there were no symptoms of intoxication.

Effect of aminoalkylphosphonic acids on experimental intoxication with beryllium. O. G. Arkhipova, T. A. Kochetkova, M. V. Rudomino, T. Ya. Medved, and M. I. Kabachnik (Inst. Heteroorg. Compds., Moscow). *Dokl. Akad. Nauk SSSR* 158(5), 1235-7(1964). Administration by intraperitoneal injection of $[\text{CH}_2\text{NHCH}_2\text{P}(\text{O})(\text{OH})\text{ONa}]_2$ (I) at 500 mg./kg. resulted in survival of nearly all rats after injection of lethal doses of BeCl_2 . Lower concns. gave less protection; Na citrate used in conjunction with I also gave considerable survival values. Pyridoxine or glucuronic acid, used jointly with I, also gave similar results. Anatomically animal organs after Be intoxication showed severe disruption of circulation. These effects are largely controlled by I. The enhancement of the action of I by citrate, pyridoxine, or glucuronic acid is possibly explained by some hindrance of the union of Be with proteins, making the latter more available for complex formation and eventual excretion. Stable Be complexes are also formed by $[\text{CH}_2\text{NHCH}_2\text{P}(\text{O})(\text{ONa})\text{OH}]_2$ and $[\text{CH}_2\text{N}(\text{CH}_2\text{CO}_2\text{H})\text{CH}_2\text{P}(\text{O})(\text{OH})_2]_2$. No biol. tests with these are reported. G. M. Kosolapoff

Some data on the beryllium level in biological media during berylliosis. P. A. Rozenberg and A. A. Orlova (Inst. Ind. Hyg. and Occupational Diseases, Acad. Med. Sci., Moscow). *Gigiena Truda i Prof. Zabollevaniya* 8(9), 42-6(1964)(Russ). Be concn. in 24-hrs. urine was examd. in patients with chronic berylliosis and in healthy persons that had worked with Be for some years. In most cases in both the groups no Be was found, but 2 healthy men excreted 1.77 and 3.16 γ /24 hrs. 1 and 3 years after Be exposition. Be in blood was not proved in any case. Then 40 mg. of Be as BeO was administered into rats by intratracheal technique. After 2, 3, and 4 months the rats were killed and the amt. of Be in the internal organs and blood was examd. The blood Be level decreased and was = 0 in the last group, while the content in liver and kidneys did not considerably change. Be can be stored in an organism for many years and small amts. are excreted with urine periodically. 15 references. Ivo Hynic

Renal function in initial manifestations of chronic lead poisoning. V. I. Dynnik (Inst. Ind. Hyg. and Occupational Diseases, Kharkov). *Gigiena Truda i Prof. Zabollevaniya* 8(9), 57-9 (1964)(Russ); cf. CA 61, 8810c. The functional state of kidneys and some other clin. symptoms were followed in 99 cases of slight chronic Pb poisoning. The av. Pb concns. in blood and urine were 0.06 and 0.2 mg. %. In blood occurred reticulocytosis, polychromasia, and anemia (70-75%), the porphyrin urine level was 0.09 mg./l. A decrease of kidney blood-plasma flow (400 ml./min.) and of creatinine clearance and a rise of the filtered fraction (30%) were observed. Pb probably causes spasms of the vasa efferentia in kidneys. Ivo Hynic

Pharmacological comparison of the binding of iron and other metals. J. Tripod (CIBA A.-G., Basel, Switz.). *Iron Metab., Intern. Symp., Aix-en-Provence, France 1963*, 503-17, discussion 518-24(Pub. 1964). Some data on the action of desferrioxamine and EDTA were presented. The results showed that Fe only was detoxicated by desferrioxamine *in vitro* and esp. *in vivo*, whereas EDTA detoxicated Mn and particularly Ni *in vitro*, and Ni, Zn, and Fe under certain conditions *in vivo*. Both chelating agents promoted the urinary excretion of Fe in the rabbit, while EDTA enhanced the urinary excretion of Mn and

esp. Zn. Thus, in spite of their stability constns. *in vitro*, EDTA exhibits a polyvalent action, while desferrioxamine does not. These effects may be modified by many biol. factors which may interact and affect gastrointestinal absorption and transportation of metals, and their fixation by proteins and other tissues, and elimination via the kidneys. Also, each reaction has its own kinetics, and the chelating agents have many competitors and are themselves metabolized in different ways. These factors are responsible for the pathol. deposition of a metal with resultant functional impairment, and also for elimination of the metal with therapeutic results, whether in the case of accidental poisoning or chronic intoxication. The situation differs depending on the metal and the chelating agent, and on whether the metal, endogenous or exogenous, is accumulated slowly or is an acute intoxication. Desferrioxamine is a particularly useful therapeutic agent for use in mobilizing Fe stores in an organism due to its low toxicity and almost exclusive affinity for Fe. EDTA, in comparison, is more toxic and less specific. 39 references. A. E. Cameron

The toxicity of beryllium sulfate towards the isolated lung of the guinea pig. Pham-Huu Chanh (C.N.R.S., Toulouse, France). *Med. Exptl.* 11(3), 202-6(1964)(Eng). The lung, heart, and trachea were removed from the guinea pig. Tyrode soln. was perfused through the pulmonary artery, and the heart was cut at the apex. The prepn. was placed in an artificial thorax, the trachea cannulated, and a mixt. of 95% O-5% CO_2 supplied to the lung. Neg. pressure in the thorax produced a dilation of the lung and upon redn. of the pressure, lung constriction occurred. When a 10-mg. dose of aq. BeSO_4 was administered by pulmonary arterial injection, constriction of the alveoli and bronchi occurred. A 1% submicronic aerosol of BeSO_4 produced the same result. Aerosolized adrenaline or Effortil neutralized the constrictive effect of Be but did not protect against a later insult. Aerosols of Aerolone (compn. not given) neutralized the constriction and protected the lung against later exposures to Be. W. L. Downs

Urinary elimination of mercury and the effect of dimercaprol on mercury elimination in chronic occupational poisonings. Halina Koziolowa and Teresa Boniecka (Akad. Med., Warsaw). *Med. Pracy* 14(2), 139-47(1963). In patients with suspected occupational Hg poisoning, diurnal urine contained up to 600 γ Hg/l. Highest Hg concn. was observed in the overnight urine. Administration of dimercaprol (2.5 mg./kg. at first and later 1 mg./kg., intramuscularly) elevated the Hg level in urine, the peak values being observed after 4-8 hrs. The low dosage of the drug proved to be sufficiently effective. Jerzy Lange

Sodium-calcium edetate in protective creams for workers exposed to metal salts. Teresa Kochanowicz (Inst. Med. Pracy, Zabrze, Poland). *Med. Pracy* 14(2), 199-204(1963). Creams contg. 20% Na Ca edetate (I) gave excellent protection against skin disorders caused by contact with Cr, Co, Mn, Pb, Ni, and Zn salts. Treatment of such disorders was not so effective. I added as a 10% soln. to plating and coating baths (1:1 by vol.) markedly increased the pH: in Ni baths, from 2.7 to 4.5; in Cr baths, from 0.1 to 0.7; and in Zn baths, from 3.7 to 4.7. Jerzy Lange

5-Aminolevulinic acid excretion in lead poisoning. H. Urbanowicz, Jan Sroczyński, and B. Piekarski (Inst. Med. Pracy, Zabrze, Poland). *Med. Pracy* 14(3), 205-10(1963). Urinary excretion of 5-aminolevulinic acid (I) was surveyed by the method of Mauzerall and Granick (CA 50, 7929c) in 20 cases of typical chronic Pb poisoning and in 15 control subjects. In the poisoned patients, the threshold value of 0.57 mg. % was invariably exceeded, some findings being even as high as 7 mg. %. In general, I content in urine was indicative of the poisoning degree; it showed good correlation with coproporphyrin excretion and basophile erythrocyte count in the peripheral blood. Therapy with Na Ca edetate lowered the urine I level in a short time. Jerzy Lange

Effect of orally administered edetic acid upon absorption and elimination of lead introduced by the same way. D. Brykalski and B. Wronowa (Inst. Med. Pracy, Lodz, Poland). *Med. Pracy* 14(4), 313-20(1963). $^{210}\text{Pb}(\text{NO}_3)_2$ was given to rats with food; Na Ca edetate was similarly administered to the animals in 5 50-mg. doses, one 12 hrs. prior to and 4 over the 2 days following the administration of Pb. The animals were killed 48 hrs. after administration of Pb, and the content of ^{210}Pb was detd. radiometrically in sep. organs. The drug decreased ^{210}Pb cumulation in liver by 45%, in kidneys by 26%, and in bones by 21%, and increased urinary elimination by 500%. The av. absorption of ^{210}Pb was 0.24% in untreated and 0.59% in treated animals. Jerzy Lange

Electrophoretic examination of serum proteins in acute poisoning due to soluble mercury salts. Stanislaw Kosmider and Stanislaw Zajaczkowski (Slaska Akad. Med., Zabrze, Poland). *Med. Pracy* 14(5), 373-8(1963). Serum proteins were examd. electrophoretically in rabbits treated intravenously with HgCl_2 or $\text{Hg}(\text{OAc})_2$ (3 mg./kg.). Significant departures from the normal levels were noted with total protein (6.12-6.60 g. % vs. 7.08 in normal animals), albumin 2.81-3.00 vs. 3.92, globulin