

Cholinesterase is inactivated by parathion more slowly than by the other anticholinesterase compounds.

The combination of parathion and cholinesterase is partly reversible for several hours and then irreversible. In this regard parathion resembles TEPP, and is intermediate between DFP, which rapidly combines with cholinesterase irreversibly, and neostigmine, which combines with cholinesterase in a completely reversible manner. When cholinesterase is in combination with neostigmine, it is at least partly protected against parathion inactivation.

Parathion is much less soluble in water than the other anticholinesterase compounds and has a greater partition in lipid than in aqueous medium. It is much more slowly hydrolyzed in water than TEPP or DFP.

HISTOLOGICAL STUDIES OF THE EFFECTS OF BERYLLIUM OXIDE (GLUCINE) ON ANIMAL TISSUES.

A. POLICARD, Brit. J. Indust. Med. 7:117-121 (July) 1950.

Policard investigated the properties of beryllium to establish the effects of beryllium oxide on tissues. Two types of compounds were used, commercial beryllium oxide with traces of fluoride impurities and purified beryllium oxide. The tissue aggregations of beryllium oxide were demonstrated by aniline dyes, polarized light and microincineration. Beryllium oxide dusts were introduced into lung, subcutaneous tissues and peritoneum, and the particles always appeared as agglutinated spherical masses. In the presence of fluoride impurities the cellular response was histiocytic, as with the fluoride-free beryllium oxide; however, the traces of fluoride tended to cause local tissue necrosis. The histiocytic hypertrophy and hyperplasia led to formation of characteristic granulomas. The beryllium oxide aggregates were slowly absorbed and eliminated, possibly via the histiocytes themselves, but although it has been possible to demonstrate beryllium oxide in the kidney and the liver, the intervening stages have not been determined. Comar has pointed out that beryllium exerts a stimulating action on the reticuloendothelial system; others have shown that beryllium compounds can block the phosphatases, thereby competing with magnesium ions. These studies offer interesting points to follow up in the investigation of tissue response to beryllium. ARNOLD A. LEAR, Boston.

THE SIGNIFICANCE OF HEINZ BODIES IN THE ERYTHROCYTE. MONAMY BUCKELL and J. DEREK RICHARDSON, Brit. J. Indust. Med. 7:131-139 (July) 1950.

Heinz-Ehrlich bodies or bodies of hemoglobin degeneration were first noted in the erythrocytes in cases of phenylhydrazine poisoning in animals. They are generally produced by substances that also lead to methemoglobinemia, and accordingly the suggestion has been made that the stained blood film is a simple way of detecting early poisoning due to nitro compounds. However, not all compounds which give rise to methemoglobinemia give rise to Heinz bodies and vice versa.

Heinz bodies have been observed in human erythrocytes in accidental poisoning due to nitro compounds, naphthalene and aniline and in malaria and hemoglobinuric (black water) fever. Studies of in vitro formation of Heinz bodies using phenylhydrazine and acetylphenylhydrazine have been carried out on oxalated blood. In addition to formation of Heinz bodies there is usually a decrease in hemoglobin and cell fragility and appearance of methemoglobin. The matter of the source, cytoplasmic or nuclear, and the exact chemical nature of these bodies is not settled.

The staining characteristics of Heinz bodies are similar to those of reticulocytes, and to prevent confusion cresyl blue reticulocyte stain should be used.

A list of substances producing Heinz bodies is appended. ARNOLD A. LEAR, Boston.

INFLUENCE OF LEAD ABSORPTION ON THE RATIO OF LARGE TO SMALL LYMPHOID CELLS. D. O. SHIELS, M. J. Australia 2:205 (Aug. 5) 1950.

Shiels shows that much more attention has been given to erythrocytes than to leukocytes in lead poisoning, and he feels that this might explain the difference of opinion as to whether there are any definite changes in the white cells in lead poisoning. In 1934 Ferguson and Ferguson investigated the effects of lead on the blood of men exposed to lead hazards in ship-breaking. They found an increase in the ratio of large lymphocytes plus monocytes to small lymphocytes.