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ABSTRACTS OF PAPERS

(An asterisk (*) following an author's name indicates "by invitation"; a (T) before a title indicates "read by title")

Studies on radiocodeine metabolism in man and in the rat. T. K. ADLER (introduced by E. LEONG WAY). *Department of Pharmacology and Experimental Therapeutics, School of Medicine, Univ. of California, San Francisco.* Excretion of C^{14} in urine, feces and expired air was studied following intramuscular injection of codeine-3-methoxy-C^{14} and codeine-N-methyl-C^{14}, respectively, in two human adult subjects, and following subcutaneous injection in two adult rats. The human subjects each received 30 mgm. codeine hydrochloride containing 0.8 μc of carbon-14; the rats received 40 mgm. radiocodeine hydrochloride per kgm. body weight. Some differences were observed between the man and the rat in the relative amounts of codeine altered at the labeled position and in routes of excretion of residual C^{14}. The disposal of C^{14} 24 to 30 hours after injection of codeine-3-methoxy-C^{14} was: (man) pulmonary $C^{14}O_2$ = 15%, urinary C^{14} = 74%, fecal C^{14} = 0.7%; (rat) pulmonary $C^{14}O_2$ = 51%, urinary C^{14} = 15%, fecal C^{14} = 10%. After injection of codeine-N-methyl-C^{14} the following figures were obtained: (man) pulmonary $C^{14}O_2$ = 7%, urinary C^{14} = 76%, fecal C^{14} = 0.5%. Fecal excretion of C^{14} in man remained negligible for as long as the third day after codeine-N-methyl-C^{14} administration. In man, prompt urinary excretion was suggested by the recovery of almost half the dose of C^{14} from the urine within six hours. Application of the Craig countercurrent technic together with the Brodie methyl orange method to this sample of urine before and after acid pressure hydrolysis resulted in the fractionation and quantitative estimation of the following radioactive components excreted during the six hours following injection of codeine-3-methoxy-C^{14}: "free" codeine = 11%, "bound" codeine = 24%, "free" norcodeine = 2%, "bound" norcodeine = 4%. During this period the pulmonary $C^{14}O_2$ recovered was 8%. (Supported by the National Institutes of Health, Bethesda, Maryland.)

Intravenous trypsin in experimental acute myocardial infarction. C. M. AGRESS*, H. I. JACOBS*, W. G. CLARK, M. J. BINDER* AND M. LEDERER*. *Cardiovascular Laboratory, V. A. Center, and Depts. of Medicine and Physiological Chemistry, School of Medicine, Univ. of California, Los Angeles.* The possibility of using intravenous proteolytic agents in the treatment of acute myocardial infarction is being studied by an adaptation of the method of Agress *et al.* (Am. J. Physiol., **170**: 536, 1952) so that fibrin clots can be injected into the coronary arteries of the closed-chest dog. Extensive infarction has been produced by this means and control experiments lasting up to nine days have shown no spontaneous resorption of these thrombi.

Intravenous crystalline trypsin (Armour) is being studied for its efficacy in lysing these clots. To date 16 experiments have been performed on 8 control and 8 treated dogs.

The experimental animals were embolized with small repetitive doses of fibrin clots until definite electrocardiographic evidence of myocardial injury which persisted for at least two hours was observed. The treated animals were given up to 6 intravenous infusions of 250,000 Armour units of trypsin in 250 ml. saline over a period of 8 days, and the survivors were sacrificed on the 9th day. The control animals received no trypsin. These preliminary studies showed that trypsin dissolved the fibrin clots without damage to the infarcted tissue, that the coronary vessels were recanalized, that the extent of infarction was decreased, that the electrocardiographic changes were improved, and that the mortality was reduced. (Supported by grants from the Los Angeles County Heart Association and the U. S. Public Health Service.)

Epinephrine and levarterenol on the intact canine spleen. RAYMOND P. AHLQUIST AND CLARENCE W. RAWSON, JR.* *Dept. of Pharmacology, Medical College of Georgia, Augusta.* A relatively simple method that avoids many of the disadvantages of the usual plethysmographic procedures has been used to compare the contractile responses of the intact spleen of anesthetized dogs to epinephrine and levarterenol. The spleen, exteriorized through a midline incision, was placed on a flat plastic plate, care being taken to avoid