The American Physiological Society

Eightieth Meeting, Philadelphia, Pa., April 14-18, 1958

The American Physiological Society held its eightieth meeting in Philadelphia, April 14–18, 1958. A total of 34 papers were presented in the three sessions devoted to gastrointestinal physiology. Subjects of the presentations included gastric secretion, physiology of the stomach, liver, bowel, pancreas, saliva, and motility and absorption of the alimentary canal. Chairman for the three sessions were Warren S. Rehm, Jr., Professor of Physiology, University of Louisville, Louisville, Ky.; Dr. Heinrich Necheles, Director, Department of Gastrointestinal Research, Michael Reese Hospital, Chicago, Ill.; and Dr. J. P. Quigley, Professor of Physiology, University of Tennessee, Memphis, Tenn.

FIRST SESSION

Chairman: Warren S. Rehm, Jr.

Inhibition of Gastric Secretion by Topically Applied Histamine. Franklin Hollander and Adolfo Schapira, Mount Sinai Hospital, New York.

Derivatives of Histamine Metabolism, Inhibitors of Histamine Metabolism, and Gastric Secretion. A. C. Ivy, University of Illinois College of Medicine, Chicago, Ill.

Gastric Secretory Responses to Graded Doses of Histamine in Dogs with Gastric Fistula and Esophagostomy. I. N. Marks and S. A. Komarov, Fels Research Institute, Temple University Medical Center, Philadelphia, Pa.


Stimulating Effect of Subcutaneous Aminoguanidine and Iproniazid (Histaminase Inhibitors) on Gastric Secretory Response to a Meal. Kurt V. Liepins (introduced by Archer S. Gordon), University of Illinois College of Medicine, Chicago, Ill.

Effect of Serotonin and its Precursor on Interdigestive Gastric Secretion in the Rat. Harry Shay, David C. H. Sun, and Margot Gruenstein, Fels Research Institute, Temple University Medical Center, Philadelphia, Pa.


Inhibition of Gastric Secretion by Glucagon and Glucose in the Dog. T. M. Lin and R. S. Alphin (introduced by K. K. Chen), Eli Lilly and Company, Indianapolis, Ind.
Meetings and Congresses


Effects of Atropine on Synthesis, Storage and Secretion of Pepsinogen in the Rat. B. I. Hirschowitz, D. K. O'Leary, I. N. Marks, and Harry Shay (introduced by Stanley Lorber), Fels Research Institute, Temple University Medical Center, Philadelphia, Pa.

The first four papers were concerned with the relationship of histamine to various aspects of gastric secretion. Hollander and Schapira demonstrated that instillation of histamine solutions into innervated and denervated gastric pouches of dogs markedly inhibited the output of free hydrochloric acid. The topically applied histamine inhibited spontaneous secretion of free hydrochloric acid as well as that stimulated by the subcutaneous administration of histamine. Products of histamine metabolism (oxidative diamination, methylation, and acetylation) were tested by IvY for their effects on gastric secretion. Four of six known products of histamine metabolism that have been synthesized were found to be totally inactive or very weakly active in stimulating gastric secretion. The "maximum acid output" in dogs with fully innervated whole stomach pouches was studied by Marks and Komarov. They found that the "maximum acid output" in response to histamine administered as a single subcutaneous injection, intermittent subcutaneous injections, and by continuous intravenous infusions, agreed well for the same dog. Pepsin secretion was also measured and no evidence was found to support the hypothesis that histamine stimulated peptic secretion. As previously reported by these workers, the acid output was found to be related to the parietal cell mass. In the discussion of this paper, it was pointed out that Mecholyl is capable of potentiating histamine secretion, and also that the output of acid following a meat meal may exceed the maximum acid output obtained with histamine. Thus, the maximum histamine response does not represent maximum secretory capacity. Pepsin output following continuous intravenous infusions of histamine to dogs with gastric and duodenal fistulas was studied by Abrams and Brooks. Pepsin output was found to fall during the second and third hours to one half to one third of that obtained in the first hour. The results supported the "washout theory" of Babkin.

The next five papers of this session were concerned with the effects of various agents on gastric secretion. Liepins reported that histaminase