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LYSOZYME ACTIVITY IN GASTRIC JUICE OF NORMAL ADULTS: PRELIMINARY REPORT.

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IT WAS suggested by Prudden, Lane, and Meyer (1) that lysozyme can be regarded as a causative factor in alimentary ulcerative disease. We analysed the gastric juice of 13 normal subjects (medical students) with respect to lytic activity of lysozyme. The present report states the amount of lysozyme we found in the residuum of the fasting morning gastric juice.

The method we have employed was that of Hartsell and Smolelis (2), modified by us (3), which we found to be accurate, rapid, reproducible, and applicable to a large number of samples.

The results are tabulated in table No. 1, and show a range of 2.6 to 19.2 micrograms lysozyme per ml gastric juice with a mean of 7.57 ± 4.6 (61%).

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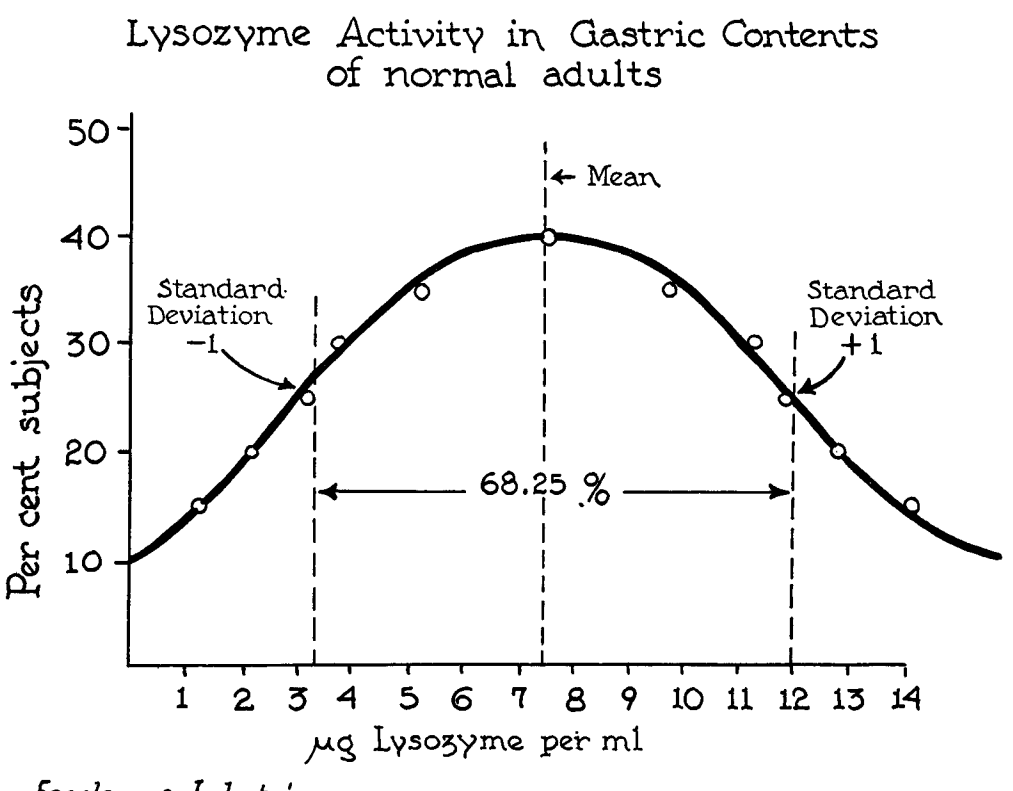
TABLE 1.

No.	Subject	sex	micrograms lysozyme per ml gastric contents
1	R.K.	m	4.6
2	L.P.	m	2.5
3	E.S.	m	2.6
4	L.M.	m	10.9
5	G.R.	m	7.0
6	R.M.	m	11.6
7	C.R.	m	6.1
8	J.P.	f	6.8
9	M.P.	f	19.2
10	V.K.	f	8.7
11	J.G.	m	2.3
12	J.N.	m	6.9
13	B.H.	f	9.2
		mean:	7.57 ± 4.6 (61%)



The 95% confidence limit (95 out of 100 times the range would be) was calculated to be 4.7 to 10.4 micrograms lysozyme per ml gastric juice, and the 99% confidence limit is 3.6 to 11.5 micrograms lysozyme per ml gastric juice.

TABLE 2

The normal distribution curve was plotted using the values tabulated in table 2:

Standard deviation	Lysozyme deviation	mean less deviation	mean plus deviation	percent of subjects
0.00	0.00	7.57	7.57	40
0.51	2.35	5.22	9.92	35
0.84	3.86	3.71	11.43	30
0.96	4.42	3.15	11.99	25
1.17	5.38	2.19	12.95	20
1.40	6.44	1.13	14.01	15

The normal distribution curve is shown in fig. 1 with ± 1 standard deviation representing 68.3% of the total area. The standard error is 1.28 which is rather high indicating that chances are less than 68 in 100 that there is no sampling error.

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THE USE OF ADENOSINE-5-MONO PHOSPHATE IN THE PRURITUS OF OBSTRUCTIVE JAUNDICE

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THIS NOTE concerns the salutary effects of adenosine-5-mono phosphate (A5MP) on the pruritus of obstructive jaundice, a condition for which there has been no satisfactory therapy in the past. In a recent article on the management of jaundice, Steigmann (1) stated that pruritus is encountered most often in surgical jaundice and it is frequently one of the complaints with which it is most difficult to deal. Of course, proper surgical therapy alleviates this symptom, but a delay of 5 to 7 days or longer usually occurs before the exact diagnosis can be made. Occasionally pruritus is so severe, that even suicide is threatened. According to a survey, quoted by Movitt (2), from Meyer and Steigmann, pruritus is present in 41% of malignant obstructive jaundice and in 21% of benign obstructive jaundice.

Weiss (3) lists the following medications for the treatment of pruritus of obstructive jaundice, none of which have proved satisfactory in our hands: gynergen, orally or intravenously, baths with oatmeal, corn starch or bicarbonate of soda, dusting powders containing menthol or anesthesin, and lotions containing phenol and calamine or diluted vinegar. Steigmann (1) adds that the antihistaminics have not proved to be of value, but that intravenuous procaine hydrochloride in 0.1% or 0.2% solution has offered striking relief to some patients. This is undoubtedly true, but the personal knowledge of several severe reactions and near fatalities from this solution, makes its use hazardous and also unnecessary, especially if a less troublesome medicament will give the same results.

A5MP is an essential metabolite, and is intimately associated with basic life processes. It is present in coenzymes I and II and flavin dinucleotides and is one of the fundamental substances in phosphorylation reactions. It is one of the compounds involved in the reactions that store energy and subsequently make it available in metabolic processes. In addition, it is also important in carbohydrate and fat metabolism.

The exact dosage of this medicament has not been arrived at yet, nor is its method of action exactly known. Our theory of its action will be discussed subsequently. The dosage that we used for treatment in our patients was 1 ampoule (20 mg.) intramuscularly three times daily. A new dosage form, now available, which gives a sustained action, contains 20 mg. of A5MP in 1 c.c. of gelatin. This should reduce the required dosage to 1 cc. daily.

CASE I

J. B., female, age 55, came with a complaint of severe, incessant pruritus of six days duration. This did not yield to any of the usual measures including bicarbonate baths and locally applied calamine lotion with phenol. The patient was obviously deeply jaundiced, yet at this visit she complained only of the pruritus. She gave a history that twenty years ago she had her first gall bladder attack. She was placed on a low fat diet for one year, and thereafter disregarded this precaution because she enjoyed good health. Six weeks prior to the onset of the pruritus, pain had recurred in the right upper quadrant of the abdomen; this pain radiated to the left upper quadrant and to the back. The pain was associated with vomiting and was aggravated by food. A cholecystogram taken a week later revealed an absence of filling of the gall bladder. She was placed on a low fat, soft diet with antispasmodics, and did rather well for several weeks. One week prior to the onset of pruritus, the pain and vomiting recurred but remained only a very short time. A week later she was suddenly awakened with intense itching, which interfered with her sleep and which continued unabated for six days, so that she finally presented herself for this complaint. She had no pain in her abdomen, and no nausea or vomiting. She also stated that her stools were of natural brown color. She gave a history of weight loss of 21 lbs. in six weeks, which she attributed to lessened food intake.

The presumptive diagnosis was jaundice due to a calculus partially obstructing the common bile duct, and she was hospitalized for further work-up and treatment.

The physical examination revealed a patient with scleral and cutaneous icterus. There were many scratch marks and erythematous areas. The pulse was 60, the respirations were 18 and blood pressure was 120/70. There were no spiders or liver

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