

was identified by the two-dimensional double-diffusion/gel-plate method of Ouchterlony.⁶ Results were compared with standards, using H.G.H. from adenohypophysis, prepared in our laboratory by the technique of Raben,⁵ and H.G.H. from the Parke Davis Laboratories.

The results are shown in the accompanying figure. The product obtained from urine with the procedure described presented only one precipitin line with the antibody anti-H.G.H. which was continued (single line) with the precipitin line obtained with H.G.H. from adenohypophysis (method of Raben) and H.G.H. prepared by Parke Davis Laboratories.

To our knowledge this is the first report of the detection of H.G.H. in urine.

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LOCAL STEROID PREPARATIONS

SIR,—In view of the demand for economy in prescribing, critical analysis of the newer low-strength triamcinolone-acetonide preparations (especially in comparison with the well-tried hydrocortisone preparations) is important.

Blank⁷ reported that 0.01% triamcinolone acetonide was as effective as 1% hydrocortisone. Portnoy⁸ showed that 0.025% triamcinolone was more effective than 1% hydrocortisone and 0.1% betamethasone phosphate.

I report here a two-stage double-blind comparison. In the first stage code-labelled preparations of 0.1% betamethasone phosphate, 0.025% triamcinolone acetonide, and 0.01% triamcinolone acetonide were compared with known 0.1% triamcinolone acetonide in patients with bilateral chronic eczematous conditions, in order to eliminate from further study any preparations which seemed much less active. In the second stage those exhibiting high orders of activity were compared with 1% hydrocortisone.

Stage 1.—In all of 10 cases 0.025% triamcinolone acetonide (T.A.) was indistinguishable from 0.1% T.A. 0.1% betamethasone phosphate proved inferior to 0.1% T.A. in 8 cases and similar to 0.1% T.A. in 2. These results were analysed sequentially with $\theta_1=0.90$, $\alpha=0.025$, and $B=0.05$, and it was evident that 0.1% T.A. was more effective than 0.1% betamethasone phosphate at the 5% significance level. The betamethasone preparation was therefore omitted from further evaluation.

0.01% T.A. was found to be inferior to 0.1% T.A. in 3 cases and of similar activity in 7.

Stage 2.—Results were analysed sequentially as described above.

After a total of 28 comparisons had been completed between 0.01% T.A. and 1% hydrocortisone, the path cut the inner boundary, indicating no significant difference in activity.

In a total of 27 comparisons there were 9 preferences for 0.025% T.A. and 1 for 1% hydrocortisone. Sequential analysis thus showed that 0.025% T.A. was the more effective at the 5% significance level.

The conclusions are:

(a) 0.025% T.A. appeared to be indistinguishable clinically from 0.1% T.A.

(b) 0.1% betamethasone phosphate was less effective than 0.1% T.A. at the 5% significance level.

(c) No significant difference was found between 0.01% T.A. and 1% hydrocortisone.

(d) At the 5% level, 0.025% T.A. was more effective than 1% hydrocortisone.

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6. Ouchterlony, O. *Acta path. microbiol. scand.* 1953, **32**, 231.

7. Blank, H. *J. invest. Derm.* 1961, **37**, 235.

8. Portnoy, B. *Brit. J. Derm.* 1962, **74**, 414.

CHOLESTEROL-LOWERING EFFECT OF ROLLED OATS

SIR,—If rats are fed on a semipurified diet containing 15% casein, 15% hydrogenated fat, and adequate with respect to calories, vitamins, and minerals, a very high level of cholesterol in the blood is obtained on supplementing the diet with 1% cholesterol and 0.2% cholic acid. This hypercholesterolaemic diet has proved useful in studying possible cholesterol-lowering properties of dietary and other factors.

In order to compare the hypocholesterolaemic effect of some cereals and cereal products, experiments were carried out with albino rats fed the above diet with 25% of the cereal to be studied incorporated at the expense of an equal amount of wheat starch. The products under investigation were fed to rats also in combination with whole milk powder, mixed in the same ratio as used for human consumption in the Netherlands, and incorporated in the diet at a level of 25%.

Each of the diets was fed ad libitum to a group of 12 newly weaned albino rats (6 males and 6 females) for an experimental period of four weeks. Thereafter total blood-cholesterol of the individual animals was determined by the method of Carr and Dreker.¹ To improve the reliability of the results the complete series of diets was tested three times in succession in the same way.

The mean values for serum-cholesterol are given in table I as a percentage of the mean value of the control group.

TABLE I—TOTAL SERUM-CHOLESTEROL OF RATS FED HYPERCHOLESTEROLAEMIC DIETS SUPPLEMENTED WITH CEREALS OR CEREAL-MILK MIXTURES

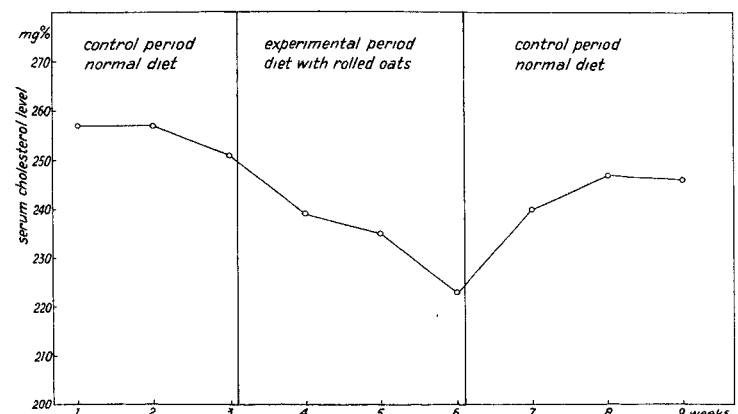
Substitution for 25% of wheat starch in basal diet	Serum-cholesterol (% of group fed basal diet)
None	100 ± 8.6
Barley	49.6 ± 3.0
Rice	82.8 ± 7.9
Instant wheat product	43.4 ± 3.6
Rolled oats	27.4 ± 3.1
Whole wheat bread	40.9 ± 3.7
Barley + whole milk powder	53.2 ± 4.1
Rice + whole milk powder	54.7 ± 5.1
Instant wheat product + whole milk powder	46.5 ± 5.0
Rolled oats + whole milk powder	37.7 ± 4.6
Whole wheat bread + whole milk powder	41.0 ± 2.8
Whole milk powder	51.7 ± 4.5

Each of the supplements caused a significant decrease in the serum-cholesterol level except for rice. The lowest level was obtained with rolled oats. The mixture of rolled oats and milk-powder was less effective than rolled oats alone, obviously as a result of the added milk fat and of the smaller amount of oat product in the diet.

The striking hypocholesterolaemic effect of rolled oats observed in rats prompted us to carry out an experiment with human volunteers.

21 healthy male volunteers, 30–50 years of age, were asked to

1. Carr, J. J., Dreker, I. J. *Clin. Chem.* 1956, **2**, 353.



Mean serum-cholesterol level in 21 male volunteers.

TABLE II—AVERAGE SERUM-CHOLESTEROL LEVEL OF RATS FED ON HYPERCHOLESTEROLÆMIC DIETS CONTAINING DIFFERENT SUPPLEMENTS

Substitution for wheat starch in basal diet	Serum-cholesterol (% of group fed basal diet)
None	100
Rolled oats 25%	18
Fat from rolled oats 1.8%	46
Defatted rolled oats 23.2%	39
Defatted rolled oats 23.2% + hydrogenated coconut oil 1.8%	46
Defatted rolled oats 23.2% + corn oil 1.8%	20

eat daily, during an experimental period of three weeks, 300 g. of an experimental bread containing 140 g. of rolled oats instead of the normal bread in their diet. The total cholesterol content of the blood-serum was determined at weekly intervals, starting three weeks before the experimental period and continuing during three weeks thereafter. The mean values obtained are presented in the accompanying figure.

The cholesterol level of the volunteers showed a significant decrease during the oat period from 251 to 239 mg. per 100 ml. after seven days and reaching a value of 223 mg. per 100 ml. after three weeks. Replacing the bread containing rolled oats by normal bread was followed by an immediate rise in serum cholesterol resulting in a mean value of 246 mg. per 100 ml. after two weeks.

One might expect the relatively high fat content of the rolled oats, 35% of which is polyunsaturated fatty acids, to be at least partly responsible for the hypocholesterolaemic effect. To get an idea of the contribution of the lipids and the other components in the observed activity, rolled oats were extracted with ether-ethanol 1:1. The extraction fat and the defatted material were incorporated into hypercholesterolaemic rations at levels corresponding to 25% of the starting material. For comparison, diets were prepared containing defatted rolled oats supplemented with hydrogenated coconut oil or corn oil, the supplements being added in amounts equal to the amount of fat extracted from rolled oats. These diets were fed ad libitum to groups of 12 albino rats for an experimental period of four weeks.

From the results as shown in table II it appears that the small amount of extracted fat from rolled oats exerted nearly the same cholesterol lowering effect as did the much larger amount of the defatted material, whereas rolled oats as such were considerably more effective. Obviously both the fat and the non-fat material contribute to the activity of rolled oats to approximately the same extent. Substituting the fat from rolled oats by hydrogenated coconut oil resulted in a considerably higher cholesterol level, whereas with corn oil the value obtained was nearly as low as with untreated rolled oats. Thus the hypocholesterolaemic effect of the fat component of rolled oats is comparable to that of corn oil.

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RESUSCITATION OF THE NEWBORN

SIR,—Dr. Leak (June 8) suggests that a good method of resuscitation of the newborn is to place some pepper down the infant's nostril. This reasoning is based on what he considers to be a significant clinical observation in 2 *Kings*, 4, 35. Here, the 3-year-old Shunemite boy, in recovering from heat stroke, sneezes seven times and wakes up.

If this is curious therapeutics, it is based on equally questionable exegesis. I have always considered this clinical episode to be medically dubious, though it would make good sense had he coughed seven times and brought up his bronchial secretions, oxygenated his brain, and recovered.

Accordingly, I have inquired about the use of the term in question. In the Hebrew Bible (commonly and tendentiously called the "Old" Testament) the word used in this episode is *zarar*. It is found nowhere else in the Bible though Isaiah, 1, 6

uses the root *zr* (*zoru*) to indicate a wound the edges of which have been squeezed together.

It seems that the root *zr* originally applied to any spasmodic or squeezing action including both sneezing and coughing. While the Aramaic *zerira* means a sneeze, the same root in Arabic indicates to wink with the eyes.

A few hundred years after *zarar* was used, Job, 41, 18 wrote the word *atash* which unquestionably means sneeze and nothing else.

Accordingly, the conclusion to be drawn from Holy Writ is that there is no sanction for pepper in the nostrils. If anything is to be put down, it should be something to evoke coughing—i.e., an oxygen tube into the trachea.

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MULTIPLE CONGENITAL ABNORMALITIES ASSOCIATED WITH RING CHROMOSOME

SIR,—Syndromes associated with an extra autosome are now well recognised. Whereas the individual abnormalities associated with these syndromes vary, a certain constant has emerged of a combination of skeletal, cerebral, cardiac, and renal defects. The purpose of the present communication is twofold: (1) to report the finding in a foetus with multiple congenital abnormalities of an autosomal deletion in conjunction with an abnormal autosome, apparently of the ring type; and (2) to illustrate that cultures of thymus gland, by avoiding the highly skilled tissue-culture techniques required for skin and fascia, bring chromosome analysis within the range of many interested in perinatal pathology.

The mother was aged 24. This was her third pregnancy, following one miscarriage and one normal pregnancy which had resulted in a live healthy child. In the present pregnancy after a gestation of 42 weeks she was delivered of a female foetus weighing 1347 g. Postmortem examination of this foetus revealed the following findings: the right hand had four fingers and no thumb, and the left hand had four fingers and a rudimentary thumb; the right foot showed talipes equino varus, a short great toe, and fusion of fourth and fifth toes; the left foot showed a minor degree of talipes equino varus, a short great toe, and fusion of fourth and fifth toes; the hands and feet showed simian creases; there was bilateral micropthalmus; there was an anterior defect of the falx with fusion of the cerebral hemispheres in this region; arrhinencephaly was present; the ears were not significantly abnormal; there was no cleft palate; the oesophagus and lungs were normal; the heart showed an interventricular septal defect and an overriding aorta; there was no diaphragmatic defect; both kidneys were hypoplastic, the uterus was bicornuate, and the remainder of the urogenital tract was normal; the remaining organs

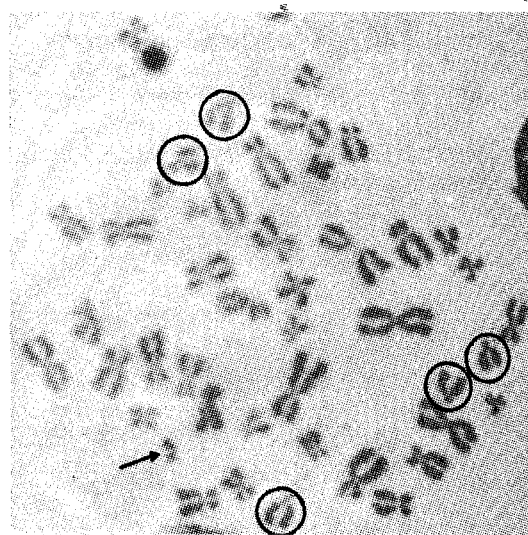


Fig. 1—Cell showing 5 chromosomes in 13-15 group (ringed) and abnormal chromosome (arrowed).