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CORONAVIRUS AND GASTROENTERITIS IN FOALS

SIR,—In an editorial¹ you suggested that coronavirus was involved in human gastroenteritis. We later reported that calf-diarrhoea coronavirus serologically cross-reacted with antibodies in human sera.² The existence of an enteric coronavirus in man is supported by electron microscopic observation of such particles in faecal specimens from an outbreak of human gastroenteritis.³

We should like to expand the list of species in which coronavirus may cause gastroenteritis. Faecal specimens from three foals that died or were killed in the acute stage of disease were examined by electron microscopy. All three foals were found to contain typical coronavirus particles.

The three specimens originated from an endemic area in the U.S. where 40 or more cases of foal diarrhoea have recently been reported. The disease is characterised by profuse watery diarrhoea, fever, extensive lymphatic involvement, and a high rate of mortality despite treatment.

We have also tested 65 equine sera for serum-neutralising antibody against calf-diarrhoea coronavirus. Titres ranged from nil to greater than 181. We believe these serological data support our electron microscopic observation of virus particles from foals, suggesting the existence of an enteric coronavirus for the horse in addition to man, swine, and calves (calf-diarrhoea agent).

Norden Laboratories Inc.,
Lincoln, Nebraska 68501, U.S.A.

E. P. BASS
R. L. SHARPEE

HYPOTONICITY IN BEER DRINKERS

SIR,—Dr Phillips and Dr Pain (Sept. 6, p. 455) have drawn attention to the fact that in the calculation of urinary osmolality (Aug. 9, p. 245, table II) we have forgotten the anions. This we regret very much. If this correction is made then the supposed urinary osmolality in beer drinkers would be approximately 40 mosmol at diuresis of about 5 litres.

Dr Phillips and Dr Pain remark that in 2 patients we found urinary osmolality of 69 and 79 mosmol. However, these urine collections began on the first or second day after admission and thus the patients had already been eating normal food.

They also suggest that our low serum-sodium values could be misleading because of hyperlipidaemia. This was excluded in 2 of our patients. Furthermore, it must be a very heavy hyperlipidaemia to cause "pseudohyponatraemia" to the extent that we found.

Dr Phillips and Dr Pain think that inappropriate secretion of antidiuretic hormone is not excluded. To this, we can say that in 2 of our patients we measured plasma-volume and found it slightly reduced.

We wish to thank Professor Demanet (Sept. 6, p. 455) and Dr Banks and Dr Lecky (Sept. 20, p. 559) for their comments.

Medical Department C,
Diakonissestiftelsen,
2000 Copenhagen F,
Denmark.

TAGE HILDEN
TAGE LYSBO SVENDSEN

A PAMPHLET TO ANSWER PATIENTS' QUESTIONS

SIR,—We appreciated the interest shown in our paper by Dr Reedy (Sept. 27, p. 604), although we believe the problems of communications between doctors or nurses and patients are very different from those between professions or members of the same profession. As we indicated, the final version of the pamphlet was prepared after many interviews and discussions with patients before, and it varying intervals after, the oper-

ation. The patients, of different classes and nationalities, were unanimous in welcoming the pamphlet and difficulties or omissions which they raised were taken into account in the next revision. Working-class women certainly understood it and did not appear to find any undue problems.

With regard to the assumptions about the behaviour of friends and relatives, gynaecologists and obstetricians, in the course of clinical work, are repeatedly made aware of the fact that patients do receive inaccurate and misleading information in this way. However, confirmation was provided by patients who, after reading it spontaneously and specifically, welcomed the pamphlet, among other reasons, because it avoided this particular problem. We should add that we found that the pamphlets were borrowed and read by other patients in the ward and many of those admitted for hysterectomy under other firms complained that they had not received copies. We have accumulated considerable information from our interviews which we intend to publish and our study continues.

Academic Department Obstetrics and Gynaecology,
Middlesex Hospital Medical School,
London W1P 7PN.

S. J. STEELE
M. F. GOODWIN

ACUTE HÆMORRHAGIC CONJUNCTIVITIS DURING AN EPIDEMIC OUTBREAK OF ADENOVIRUS-TYPE-4 INFECTION

SIR,—A new entity, acute hæmorrhagic conjunctivitis (A.H.C.), has been described in several countries since 1969.¹ The aetiological agent of this condition was first described by Kono et al.² and was later classified as enterovirus type 70.³ Epidemics of A.H.C. have never been reported in Italy; therefore the observation in Rome of several cases of an eye infection characterised by subconjunctival

VIROLOGICAL STUDY OF 8 CASES OF ACUTE HÆMORRHAGIC CONJUNCTIVITIS

Patient No.	Age (yr.)	Conjunctival swab (virus isolated)	Serum-neutralising-antibody titres*			
			Adenovirus type 4		Enterovirus type 70	
			Early	Late	Early	Late
1	38	Adenovirus 4	1/8	1/128	< 1/8	< 1/8
2	19	Negative	< 1/8	1/64	< 1/8	< 1/8
3	55	"	1/32	> 1/128	1/8	1/16
4	59	"	1/32	> 1/128	< 1/8	< 1/8
5	26	"	—	—	—	—
6	30	Adenovirus 4	—	—	—	—
7	27	" 4	1/8	1/32	< 1/8	< 1/8
8	34	" 4	—	—	—	—

* Titres were determined against 100 T.C.D.₅₀ of virus.

hæmorrhage prompted a virological study to determine whether an enterovirus was the cause. 14 adult patients with A.H.C. and 46 with follicular conjunctivitis (F.C.) sought medical care at the outpatient service of the Ospedale Oftalmico Regionale from the beginning of March up to the end of May, 1974. The number of F.C. cases was at the same level for this period of the year as in the past, while the incidence of A.H.C. appeared to be unusually high. The symptoms of patients with A.H.C. were ocular pain, sudden swelling, congestion, and watering: the subconjunctival hæmorrhage varied from petechiae to small blotches covering the whole bulbar conjunctiva. The cornea was not involved, hæmorrhagic symptoms generally subsided within a week, and recovery was complete within the follow-

1. *Lancet*, 1975, i, 257.
2. Sharpee, R. L., Mebus, C. A. *ibid.* p. 639.
3. Caul, E. O., Paver, W. K., Clarke, S. K. R. *ibid.* p. 1192.

1. Lim, K. H. *Singapore med. J.* 1973, 14, 82.
2. Kono, R., et al. *Lancet*, 1972, i, 1191.
3. Mirkovic, R. R., Kono, R., Yin-Murphy, M., Sohler, R., Schmidt, N. J., Melnick, J. L. *Bull. Wild Hlth Org.* 1973, 49, 341.