A17. A SEROEPIDEMIOLOGICAL STUDY TO DETERMINE THE PREVALENCE OF VERO TOXIGENIC ESCHERICHIA COLI (VTEC) IN MAN AND ANIMALS

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The significance of Vero toxic *Escherichia coli* (VTEC) has been discussed[1]. Toxins producing cytopathic effect (CPE) on Vero cells can be divided into "Shiga related" (SRVT) and "Shiga unrelated" (SUVT) groups (1). Human (H30), calf (SLM56), porcine (SLM7) and goat (8G) VTEC strains were included in this study to represent the different biological and antigenic groups of VTEC. The method used for antibody detection was a toxin (4 units) neutralization assay on Vero cell monolayers[2], the source of toxin being the culture supernatants of the respective *E.coli* strain.

Cattle, and to a lesser extent goats, showed a significant prevalence of seropositivity to SRVT (Table 1). All sera showing neutralization activity to calf SRVT (SLM56) also neutralized the VT of Human *E.coli* (H30), confirming the expected antigenic cross-reactivity between the VT of these strains[1].

Table 1. Prevalence of antibodies to Vero toxin of *E.coli*

Species	No. of sera tested	Shiga related VT (SRVT)			Shiga unrelated VT (SUVT)
		H30*	SLMS56**	8G***	SLM7+
Cattle	73	85%++	71%	ND	3%
Human	44	0	0	ND	0
Chicken	25	ND	0	ND	0
Pigs	44	ND	0	ND	0
Goats	42	ND	12%	19%	0
Rabbits	24	ND	0	ND	0

* Human VTEC; ** Calf VTEC(SRVT); *** Goat VTEC; + Pig VTEC
++ Per cent positive ND- not done

The age stratified analysis of the seropositivity indicated the exposure of cattle to VTEC early in life. These results confirm the role for SRVT in cattle and buffalo calf diarrhoea reported earlier (3,4).

Pigs, chicken, rabbits and human sera failed to neutralize VT from any source. No neutralizable antibodies were detectable to SUVT in any of these sera (including the pig from which the strain was isolated) with the exception of 2 cattle sera which neutralized pig VT. The absence of anti VT antibodies in human sera is compatible with the fact that no VTEC were isolated from 130 diarrhoeic children, indicating that VTEC are not significant cause of diarrhoea in man in Sri Lanka.

This work was supported by a grant from Wellcome Trust, UK.

References

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