The present study deals with the analysis of cytopathic effect (CPE) of peste-des-petits ruminants virus (PPRV) in vero cells. PPRV isolated from sheep in Tamil Nadu and confirmed by the use of nucleocapsid gene probe (Shaila et al. 1989) was obtained from the Department of Microbiology, Madras Veterinary College. PPRV was used to infect vero cells maintained in BHK21 medium with 10% foetal calf serum. The growth of the virus in cell-culture was confirmed by immunofluorescence using rinderpest hyperimmune serum. The infected cultures were stained with Giemsa stain at periodic intervals and CPE analysed. By the second day post-infection (PI), cell rounding and aggregation was evident. Syncytia with circular arrangement of nuclei was seen by day 3 PI followed by vacuolation and cell lysis on day 4 PI. Intranuclear inclusions were more common. Similar changes were reported by Taylor and Abegunde (1979).

An interesting feature observed was that

Figs 1-3. 1. PPRV infection in vero cells. Giemsa stained x 500. Note syncytia. 2. PPRV infection in vero cells. Giemsa stained x 500. Note cytoplasmic extensions and extensive vacuolations. 3. PPRV infection in vero cells. Giemsa stained x 500. Note cell lysis, vacuolation and intranuclear inclusions.

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syncytia were small and very few in number (Fig. 1). This could be used as a pointer to PPRV infection as against rinderpest virus (RPV) which forms large and numerous giant cells in vero cell-cultures. Lefevre and Diallo (1990) observed that PPRV induces large syncytia in primary explants of bovine cells but not in vero cells.

Intracytoplasmic vacuolation of PPRV-infected cells was extensive (Fig. 2). Intracytoplasmic and rarely intranuclear inclusions are reported in PPRV-infected cells. However, in our study intranuclear inclusions were prominent (Fig. 3). It may be possible that intracytoplasmic inclusions were marked by the presence of extensive vacuolation.

RPV and PPRV are 2 closely related viruses difficult to distinguish serologically (Diallo et al. 1989). The use of cDNA probes is beyond the realm of most laboratories. Hence the presence of small and a few syncytia along with extensive vacuoles in infected vero cells might indicate the possibility of PPRV infection.

REFERENCES


