

**Effect of cyclosporine A on the response of pigs  
to experimental rotavirus and coronavirus T.G.E. infections**

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Because of its immunodepressive activity and its low toxicity, cyclosporine A is successfully used in human medicine to inhibit the rejection of organ transplants.

Immunodepressive agents often stimulate the development of viral or bacterial infections.

Prior to an intestinal grafting in human infant, 34 pigs of 25 kg were used as an experimental model to determine whether the daily oral administration of cyclosporine could modify the response of the organism to an experimental *rotavirus* and *coronavirus* T.G.E. infection. There was no significant difference between treated and untreated animals as regards their clinical response and the humoral immune reaction to these two enteropathogenic viruses.

**Oral immunization of sows against transmissible gastroenteritis  
using the T.G.E.-coronavirus strain 188-SG**

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Strain 188-SG of T.G.E.-*coronavirus* isolated in our laboratory and whose properties were previously described was used as a live virus vaccine to immunize seronegative pregnant sows. Sows were orally inoculated 6-7 weeks before farrowing according to a procedure developed in our laboratory. A booster injection was done IM 7-15 days before farrowing.

Immunity was thereafter tested using two methods :

— determination of the level of passive protection conferred to suckling piglets against a virulent challenge exposure 4-8 days after farrowing ;

— determination and titration of neutralizing anti T.G.E. antibodies in the sow serum and milk.

Results obtained were the following : a high and early morbidity in piglets born from control sows and in those from vaccinated and non booster injected sows. The mortality rate 7 days after challenge exposure was 96 and 58 p. 100, respectively. Conversely, morbidity was low in piglets from vaccinated and booster injected sows. In the latter the mortality rate was 25 p. 100. A more severe control of some parameters (dates of vaccination and booster injection) and of the stress factors after farrowing might lead to a better protection of the animals.

### **Non specific defenses against transmissible gastroenteritis in pigs. Study of virus-lymphocyte interactions**

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Transmissible Gastroenteritis virus (TGEV) primarily infects enterocytes of the small intestine. However, other cells involved in host immune defenses also interact with TGEV; these cells are macrophages and lymphocytes. Concerning lymphocytes, TGEV, although unable to infect these cells, induces interferon production. Non immune pig lymphocytes have also a non specific antiviral effect since they inhibit viral replication and kill virus infected cells *in vitro*.

### **Importance of streptococcal disease (*Streptococcus suis*, group R) in France**

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The streptococcal disease, *Streptococcus suis* (Lancefield's R group) is an important pathological problem in French pig production. The illness appears as soon as the pigs are grouped in post weaning or fattening farms and can be transmitted to man. It causes septicaemias, bronchopneumonias, endocarditis, polyserotitis, arthritis and even diarrhoea in the pig. The morbidity and mortality may be high. Exsudative and acute inflammatory lesions are observed. Application of the treatment and of prophylactic measures is difficult. At the laboratory, 340 out of the 455 *Streptococcus* strains isolated from healthy and ill pigs belonged to *Streptococcus suis* (group R), i.e. about 75 p. 100. The other 115 strains belonged to Lancefield's C, E, L, G, B groups and to *Streptococcus uberis*. Animals aged five to twelve weeks were the most affected. This *Streptococcus* is a capsulated diplococcus; eight serotypes seem to coexist in France. This germ is very close to human pneu-