

UPDATE 19 JULY 2017

Investigation of possible reinfection with Rota in SA

Fanciers will remember that in the last Update a SA fancier's birds were under investigation for a possible reoccurrence of Rota virus after 5 months. This possibility was concerning and had the potential to alter our understanding of the persistence of immunity with this disease. The fancier had lost approximately 40 birds including 2 Association winners in February. In late June his birds had again developed vomiting and diarrhoea and 5 had died. A live bird which was a bit quiet and had wet dropping was taken to a local avian vet. The bird was euthanized, a swab collected for a Rota PCR (DNA) test and a complete set of tissues collected for histopathology. The Rota PCR was positive. There was however no evidence of an active Rota infection on histopathology (microscopic examination of tissues).

The pathologist summarized his report by stating

"There are no significant lesions within the liver to implicate rotavirus infection. However the kidney has patchy areas of subacute lymphocytic interstitial nephritis, which raises suspicion of Pigeon Paramyxovirus infection (PPMV-1)."

The positive Rota virus test shows that the bird was still carrying Rota virus and as such was a long term carrier of the infection. The usual pathology seen in the liver with Rota virus is a necrotizing hepatitis (inflammation in the liver severe enough to cause tissue death).

Absence of this typical pathology as well as other changes shows however that there is no active Rota virus infection. Some of the pathology changes (as described by the pathologist) are however consistent with a PMV infection. On investigation apparently the fancier's birds were overdue for their PMV vaccination which supports this diagnosis.

Although disappointing to loose birds due to any cause this result has got to be considered as pleasing when one considers the alternatives. Such short term immunity to Rota would compromise the racing of birds this year that have recovered from a Rota infection and possibly also make control of the disease through vaccination more difficult.

Another Melbourne loft with a similar history is currently under investigation. These results should be available later this week and will be reported on the Update when available.

"Poovac" use

To date we have distributed approximately 1340 'Poovacs'. Fanciers have been keen to offer at least some protection to their birds against the nastier strains of Rota virus using this method. I have spoken to many of these fanciers who typically describe that after exposing their birds to Rota virus using this method nothing much happened for on average about 6-7 days but in some lofts up to 16 days. After this symptoms commenced. On any one day 10-20 % of the birds had vomiting or diarrhoea. Some fanciers report that the birds kept flying normally and their appetites remained unaltered while others reported that some birds did not want to fly and the team had a reduced food intake. After about a week the symptoms disappeared and the birds appeared to recover. Often fanciers reported that in this immediate post recovery stage the birds appeared super well. Fanciers have resumed tossing about 10 days later without incident.

I have had 9 fanciers contact me saying that they have had one or more birds die. No doubt there are more. Of the 9 fanciers that I have spoken to, 3 have had testing done on their birds. A summary of the experiences in these 9 lofts is below

1/ One bird died in a loft of 300 birds. A Rota PCR and complete histopathology was done. The Rota test was positive and the bird had mild necrotising hepatitis (the typical lesion

that is seen with Rota virus.) The bird had actually died, however, due to inhaling vomited food and had choked while in a weakened state.

2/ 3 birds died in a loft of about 300. A Rota PCR and complete histopathology was done.

The Rota PCR was positive. Interestingly there was no necrotising hepatitis. The pathologist commented that "the lesions associated with Rota virus are not severe enough to have caused death". The pathologist identified a bacterial infection in the loft that combined with the Rota had killed the birds. The birds were treated with antibiotics

3/ 2 birds died in a loft of less than 50 birds. A Rota PCR and histopathology was done. The Rota PCR was positive. The pathologist diagnosed a PMV infection however the attending veterinarian submitted an incomplete set of tissues making a definitive diagnosis difficult

4/ 18 birds died in a loft of about 300. No diagnostic work done. The birds started to become unwell 4 days after use of the "Poovac". The birds were overdue for their PMV vacc and had been vaccinated 10 days earlier. The cause of the deaths is unknown however PMV or a nasty Rota strain would be possibilities

5/ One death in a loft of 300. No diagnostic work done but likely to be associated with the use of the "Poovac"

6/ 2 deaths in a loft of 350. No diagnostic work done. Interestingly an outbreak of nasty Rota virus occurred in the rural club that this fancier belonged to shortly after. Other members lost significant numbers of birds . This fancier had no further deaths

7/ 5 deaths of 250. No diagnostic work done.

8/ 12 deaths in a loft of 350. No diagnostic work done.

9/ 8 deaths in a loft of 300. Diagnostic work not done.

One outstanding feature talking to fanciers is incredible variation in the pattern of clinical disease and the severity of symptoms seen throughout the lofts when they have all been exposed to the same strain of Rota. It seems that the effects of Rota are modified significantly by loft based factors

I am keen to provide fanciers who have had birds die after the use of a 'Poovac' with answers and also feel that it is important to find out what has happened because the information gained will benefit our understanding of the disease generally. To this end, we at the Melbourne Bird Veterinary Clinic have decided not to make any charge for our services in testing these birds. AgriBio however no longer offers supported diagnostics for Rota virus and so these charges are unavoidable .These charges will be passed on to the client at cost. So if fanciers have lost birds ,give me a call and we will get to the bottom of it for you.

One thing that does seem very important in order to minimise the severity of symptoms and minimise the chance of death is to follow the advice on the 'Poovac' advice sheet and use registered brands of probiotic such as Probac and registered electrolytes/rehydrating preparations such as Electrolyte P180. Some of the products available to fanciers are not what they claim to be.

Medication use and abuse

I had a fellow VHA member this week over for afternoon tea He is the current VHA long distance champion . If the results of the last 10 years were collated I think he would be our most successful long distance fancier spanning this time. He starts the season with about 110 birds and usually sends 40-50 of these at the end of our 23 race program to one of our two 500 mile races or our 600mile race. He vaccinates his birds each year against PMV and Pox and during racing treats regularly for wet canker. He has exposed his birds this year to the Rota Brisbane variant during which time he treated with probiotics and electrolytes.

None of his birds died. He informed me that his birds last had antibiotics in 1992 ! I also had a fancier call me this week who explained that he had just spent \$700 on supplements and medications and had now spent a total of \$2,500 this year. He had had no birds examined but had his birds droppings examined after posting. Some of the programs that I see people using virtually mean that the only day their birds get clear water is in the race basket. I guess every fancier is different but my own personal opinion is that it is not necessary to use a lot of money on medications and when medications are used it should be after diagnostic work showing that there is benefit in their use. I think this is particularly important now as fanciers face dealing with Rota virus.

Vaccine trial results

All birds in the trial generated significant antibody levels. We do not however know what actual level of antibody is required to protect the birds from disease. We are therefore conducting further tests this week called virus neutralisation tests that will determine what level is required to block the effects of the virus. A protein in Rota virus called VP8 stimulates the production of a protective antibody called IgY. When IgY was measured in recovered birds that had naturally caught the disease, it was high. To create the vaccine VP8 was synthetically made. (This could be done because the genome has been sequenced and we can therefore code for this protein). Electrophoresis confirmed that there were good levels of VP8 protein in the vaccine . There is no reason to suspect that the immune system will respond any differently to VP8 protein whether the pigeon is exposed to it naturally by catching the disease or through vaccination. It will be pleasing however to see the final results

We did hope to have the level of immunity results available for the Brisbane variant last week however the work load last week was just too high. Hopefully this will be completed this week

Does Rota virus compromise subsequent racing in recovered birds?

This is a common question. Basically we don't know. We would need to autopsy and do histopathology on these birds to see if there was changes and organ damage that might cause this. No doubt with time the experience of fanciers will at least give an indication of this. Essentially Rota virus damages the liver and kidneys. We have had some fancier sreport a persistent thirst in their birds after Rota infection that raises the possibility of kidney damage. As far as liver damage is concerned my feeling is that it probably depends on how badly the liver was damaged at the time of infection. The liver has a good capacity to repair but I think it is reasonable that some birds which were severely affected or carried the virus for a long time risk the possibility of having their performance compromise, particularly on hard days. But as I said further testing will make this clearer

More PMV cases

We have diagnosed 4 cases of PMV this week. One fancier has had 18 birds die so far. To me this seems unusual. There seems to be a reluctance amongst some fanciers to vaccinate their birds. I would encourage all fanciers who have not vaccinated their birds to do so.