IMHA Clinical Research Team Report 2021

Please find below a summary of the work being undertaken by the IMHA Clinical Research team, thanks to your funding. We are delighted to report that despite ongoing challenges due to the pandemic, 2021 has been a year with great progress, and your support has been crucial to the continuation of this work:

1. Study of new biomarkers for guiding treatment in IMHA
The Team's main focus at the moment is trying to identify new markers that can be used to guide and inform the treatment of dogs with IMHA. The main aim is to try to individualise medications so that each dog is given enough medication to manage their IMHA without causing side effects.
In the past, dogs have been treated according to fixed schedules of treatment printed in textbooks, but we know that, for some dogs, this isn't sufficient to control the disease or alternatively may cause excessive side effects. With new markers, the correct doses could be chosen for each individual dog, avoiding these problems.
Due to COVID-19 the Team had to stop recruitment for approximately six months in 2020 but they have been now able to complete the study, with final recruitment of dogs with IMHA hat were referred to the RVC for treatment during 2021.This project is also being funded by the Kennel Club Charitable Trust. The team are currently processing laboratory samples to look at biomarkers in the blood of IMHA cases.
Expected outcomes: Evaluation of novel biomarkers for response to treatment and likelihood of developing adverse effects in dogs treated for IMHA. Active recruitment has now stopped. Results are currently under analysis, and the team hopes to publish findings in 2022.

2. ImmunoRegistry to collect information about dogs with autoimmune disease

We have recently launched our new project – Immunoregistry - the purpose of which is to gather a large quantity of data about patients with immune-mediated (IM diseases), in particular from patients that are presented at and treated in first opinion practice.

Data will be gathered from general veterinary practices, referral centres, and also owners of registered patients. Our aim will be to examine the data to determine the answers to questions like:
- Is referral led by client demand or veterinary advice?
- Are the majority of dogs with severe IM disease referred to a referral hospital? Is there evidence of treatment of severe disease at first opinion practices?
- Would it be appropriate to share treatment protocols developed at referral hospitals with first opinion vets?
- Do first opinion practices generally consider IMHA to be a disease associated with high mortality in dogs?
- What evidence is there of the effect of differing amounts of glucocorticoids on patients of different, sizes, breeds and ages?
This project is also being funded by the Small Animal Medicine Society (SAMSoc).

3. The PALE study to investigate the best immunosuppressive treatment for dogs with IMHA
We are currently in the process of planning a multi-centre, prospective, randomised, clinical trial with the aim to compare different, commonly used, treatment protocols for dogs with IMHA. Our aim will be to examine the data to determine whether one of the treatments is superior to the others in respect to efficacy as well as safety (e.g. adverse effects associated with different treatment protocols).

4. ImmunoBank to collect samples for future research
In a pioneering new initiative, the RVC is collecting left-over blood, urine and stool samples from dogs with autoimmune diseases like IMHA into a Biobank for use in future research studies. When pets have a blood test, some of the sample is often left over and would normally be thrown away. Instead, with the consent of the owner, we will save the sample and make it available for researchers doing projects intended to improve the diagnosis and treatment of dogs with the same disease. Collecting more samples will enable the RVC and its collaborating partners to do more ambitious research in future.
Expected outcomes: A repository of samples will be sourced and stored and then developed into a Biobank which will be of suitable size to support new research studies by 2024.

Unfortunately, due to COVID-19 this project had to be paused and we are keenly waiting to re-start it soon in 2022.

5. Fund for innovative research in the treatment of dogs with IMHA
New ideas and questions constantly arise in the treatment of dogs with IMHA, and we have been able to address some of these through the funds so kindly donated via the RVC Animal Care Trust which support these initial small research projects and new approaches to clinical research. This gives us the opportunity to develop novel project ideas in our research group, which can then be expanded to larger studies if they appear to be promising.
Examples of studies that were made possible by this funding are:
• Pilot study on assessing the glucocorticoid receptor in dogs with immune-mediated diseases to predict outcome as well as adverse effects of treatment. In this case the data has been collected and analysed, further additional laboratory analysis was performed in spring/summer 2021, the final manuscript has been accepted for publication in the Journal of Veterinary Internal Medicine in May 2022 – currently awaiting online publication
• Developing plans for sequencing of RNA from blood cells in dogs with IMHA. RNA is part of the genetic code, which shows which genes are being expressed in a cell at any moment in time. By conducting RNA sequencing, we can establish which genes are being expressed inappropriately in the cells circulating in the blood of dogs with IMHA, potentially identifying reasons why the disease develops and progress. Animal Care Trust funding is enabling us to store samples for RNA sequencing, which we intend to perform once various quality control assessments have been completed.