

Masterclass on Autoimmune and Immune-mediated Skin Diseases of Small Animals

Final Schedule - Detailed Course Description

Day 1 - Friday June 16

1.1. *Mechanisms of autoimmune attack: from morphology to immunology*

In this lecture, Keith and Petra will focus on lesion formation in autoimmune skin diseases, starting from clinical and histological images to then explain the immunological mechanism triggering the appearance of such lesions (1.5 hour).

1.2. *History and classification of autoimmune skin diseases*

In this lecture, Thierry, as the “oldest” of the three lecturers, will have the privilege to highlight the historic landmark publications of the veterinary dermatologists that pioneered the description of autoimmune skin diseases in dogs and cats in the 80's and 90's. Will follow a description of the evolution of the classification of the autoimmune diseases in animals. (45 min)

1.3. *Autoimmune subepidermal blistering diseases*

Much has changed since all basement membrane autoimmune diseases were named “bullous pemphigoid”! Thierry will start with a short overview of the structure of the epidermal basement membrane and will devote most of this lecture highlighting the differences between the two most common diseases of this group: **mucous membrane pemphigoid** in dogs and cats and **epidermolysis bullosa acquisita** in dogs; he will finish with a synopsis of the rarer diseases from that group. In this section will be introduced some of the drugs used for treatment of basement membrane autoimmune blistering diseases: the *tetracycline antibiotics and niacinamide/nicotinamide combination*, and *colchicine*. (1.5 hour)

1.4. *Deep pemphigus variants*

While **pemphigus vulgaris** was the first autoimmune disease reported in the dog, it is not commonly seen by veterinarians. Yet, by assembling all cases published in the literature, Thierry will present the unique characteristics of this disease in dogs and cats, and how similar it is, immunologically, to the disease of humans. Then, he will show how this disease overlaps with the two rarer variants of deep pemphigus, **paraneoplastic pemphigus** and **pemphigus vegetans**. (1 hour)

1.5. *Superficial pemphigus variants*

Obviously, all participants will have seen dogs with **pemphigus foliaceus**, but perhaps they will not be fully aware of the variability of its clinical phenotype. Herein, Thierry will present the classic and insecticide-triggered phenotypes in dogs and the classic form of cats. A short historical overview of the discovery of the pemphigus foliaceus antigen will then follow. The pemphigus-lupus crossover **pemphigus erythematosus** will be presented in the dog. Finally, Thierry will present the rationale for the development of *oral glucocorticoid pulse therapy* for pemphigus foliaceus and

summarize the results of the study comparing it with traditional immunosuppression. (1.5 hour)

Day 2 - Friday June 17

2.1. *Canine PF: beyond the classic facial phenotype*

Petra, using clinical cases, will present clinical variants of canine pemphigus foliaceus. Using these examples, she will discuss relevant differential diagnoses depending on the clinical phenotype and she will also highlight the principles of immunosuppression and the commonly used immunosuppressant *azathioprine*. (1 hour)

2.2. *Autoimmune blistering skin diseases: diagnostic tests and their role in the workup of patients (PB)*

In this lecture, using clinical examples, Petra will review a variety of common as well as less common diagnostic tools used to confirm the final diagnosis of pemphigus and autoimmune subepidermal blistering diseases. (1.5 hour)

2.3. *Cutaneous lupus erythematosus*

Thierry will come back to the podium to introduce the classification of cutaneous lupus erythematosus in humans and its 1998 adaptation to dogs. Will then follow an extensive description of the canine analogue of human subacute cutaneous lupus erythematosus, the **vesicular cutaneous lupus erythematosus**. He will then move on to the four currently-recognized variants of canine chronic cutaneous lupus erythematosus: the **exfoliative cutaneous lupus erythematosus**, **mucocutaneous lupus erythematosus**, and, finally, the **facial and generalized subsets of discoid lupus erythematosus**. To close this presentation, there will be a short discussion on skin lesions of **systemic lupus erythematosus** in dogs. In this lecture will be also discussed the drugs uniquely useful to treat cutaneous lupus variants in dogs: the *calcineurin (cyclosporine, tacrolimus)* and *JAK inhibitors (oclacitinib)*. (1.5 hour)

2.4. *Hair follicle immunology and autoimmune diseases of the adnexae (PB, KL)*

In this lecture, Petra and Keith will introduce another target of the autoimmune attack: the hair follicle. The unique immunology of hair follicles will be briefly reviewed at the beginning of the lecture. Afterwards we will delve into specific autoimmune and immune-mediated hair follicle-targeting diseases with a focus on their clinical and histological aspects. Of course, we will not forget the sebaceous gland! (1.5 hour)

2.5. *Mystery cases – Part 1 (PB, KL)*

In this session, Petra and Keith will present a clinical case which, together with the help of audience, will be analyzed and worked up with the goal of confirming the final diagnosis. Treatment and outcome will also be discussed. Participants will get an access to the basic clinical case information and photos prior to the lecture to formulate their own differential diagnoses and diagnostic plan. (0.5 hour)

2.6. *Autoimmune diseases of melanocytes (KL)*

In this lecture, Keith will briefly review melanocytes' biology and then dive into the details of the autoimmune diseases targeting melanocytes in animals. **Vitiligo** and the canine **uveodermatological syndrome** will be covered in detail including their clinical, immunological and histopathological features. At the end, Petra will jump in to discuss the common, as well as less common, treatment options used in these diseases, including *mycophenolate mofetil* (1 hour)

2.7. *Mystery cases – Part 2 (PB, KL)*

In this session, Petra and Keith will present a clinical case which, together with the help of audience, will be dissected and worked up with the goal of confirming the final diagnosis. Treatment and outcome will also be discussed. Participants will get an access to the basic clinical case information and photos prior to the lecture to formulate their own differential diagnoses and diagnostic plan. (0.5 hour)

Sunday June 18

3.1. *Erythema multiforme, Stevens-Johnson syndrome, toxic epidermal necrolysis (KL)*

In this lecture, Keith will review the clinicopathologic features of these epidermal necrotizing diseases, including their proposed pathomechanism, which is based on that of humans. The pathology of skin lesions will help to inform the clinical presentations seen by clinicians and anchor what is known about pathomechanisms. Petra will then highlight the clinical management of these diseases, including the mechanisms of action behind the use of *human intravenous immunoglobulins* and their potential for use in autoimmune and autoinflammatory diseases. (1.5 hour)

3.2. *Mystery cases – Part 3 (PB, KL)*

In this session, Petra and Keith will present a clinical case which, together with the help of audience, will be reviewed and worked up with the goal of confirming the final diagnosis. Treatment and outcome will also be discussed. Participants will get an access to the basic clinical case information and photos prior to the lecture to formulate their own differential diagnoses and diagnostic plan. (1 hour)

3.3. *Cats must be special: selected feline immune-mediated skin diseases (PB)*

The most common autoimmune skin disease in cats, pemphigus foliaceus (PF), was covered in Thierry's lectures. But what other autoimmune/immune-mediated skin diseases do cats suffer from? In this lecture, Petra will introduce selected feline immune-mediated skin diseases and discuss the major clinical differential diagnoses, diagnostic work up, and treatment approaches. (1 hour)

3.4. *Mystery cases – Part 4 (PB, KL)*

In this final case session, Petra and Keith will present a clinical case which, together with the help of audience, will be deciphered and worked up with the goal of confirming the final diagnosis. Treatment and outcome will also be discussed. Participants will get an access to the basic clinical case information and photos prior to the lecture to formulate their own differential diagnoses and diagnostic plan. (0.5 hour)

3.5. *Use of immunosuppression in the clinic: recapitulation (TO)*

As most of the participants will know, the published recommendations for the immunosuppressive treatment of autoimmune skin diseases in animals remain largely vague. In this lecture, Thierry will highlight the endpoints that could be used for the follow up of autoimmune disease treatment, as these provide useful marks when to adapt the management protocol. Finally, the preferential treatment options for each autoimmune disease will be reviewed one last time, and we will finish with the drug dosages and laboratory follow-up currently recommended. (0.5 hour)

3.6. *Panel discussion with speakers – Q&A session (PB, KL, TO)*

Before returning, we will all get together one last time to answer any questions that might have come to your minds over the last few days. (0.5 hour)