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Feline allergic diseases: introduction and proposed nomenclature

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Background – Feline allergic diseases present as challenging problems for clinicians, not least because of the number of reaction patterns of the feline skin, none of which are specific for allergy. Furthermore, there is some controversy over the nomenclature that should be used in their description.

Objectives – To review the literature, assess the status of knowledge of the topic and the extent to which these diseases could be categorized as atopic in nature, and make recommendations concerning nomenclature.

Methods – Atopic diseases in humans and cats were researched. A comparison then was made of the essential features in the two species.

Results – There were sufficient similarities between human atopic diseases and the manifestations of feline diseases of presumed allergic aetiology to justify the use of "atopic" to describe some of the feline conditions affecting the skin, respiratory and gastrointestinal tract. However, none of the allergic skin diseases showed features consistent with atopic dermatitis as described in man and the dog.

Conclusions and clinical importance – The term "Feline Atopic Syndrome" (FAS) is proposed to encompass allergic diseases of the skin, gastrointestinal tract and respiratory tract, and "Feline atopic skin syndrome" (FASS) proposed to describe allergic skin disease associated with environmental allergies. We are not aware of any adverse food reactions in cats that are attributable to causes other than immunological reactions against the food itself. We therefore propose an aetiological definition of "Food Allergy" (FA) to describe such cases.

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Introduction

Research into feline skin diseases of presumed allergic aetiology has lagged far behind that in allergic dogs. In part, this may be due to the fact that canine atopic dermatitis (AD) has striking similarities with its human counterpart, and much research has focussed on the canine disease as an experimental model of the latter. Another issue that sets feline dermatology apart from that in other species is that inflammatory skin diseases of the cat present with a spectrum of reaction patterns, some of which appear to be unique for this species, and the fact that each reaction pattern may in turn have a wide range of inciting causes. Thus, one cannot expect that any particular feline condition will show similar manifestations to the disease homologues in dogs or in people. There also is a lack of agreement regarding the nomenclature used to describe feline skin diseases, with some favouring an aetiological approach,[1] whereas other authors prefer to employ a terminology that as far as possible parallels that used in humans and dogs.[2] Furthermore there is a paucity of data on the spontaneous hypersensitivity disorders affecting the gastrointestinal and respiratory tracts, although the experimental model of feline asthma has been well-characterized.[3]

This paper, the first in a series on feline allergic skin diseases, is timely, as it reviews the relevant published literature on these topics. This introduction commences with a historical review of the essential features of human allergic diseases, which is followed by an assessment of the extent to which the various feline allergic disorders can be considered as equivalent clinicopathological entities. Where the use of the same descriptors does not appear justified, alternative terminology is proposed. The ensuing three papers review the current knowledge regarding the immunopathogenesis of allergic diseases affecting the feline skin and lungs, their clinical signs and diagnostic features, and, finally, the therapeutic options.

Atopic diseases of man

1 The definition of "atopy" and the nature of skin-sensitizing antibody

Much of the terminology and our basic understanding of allergy in humans resulted from pioneering work undertaken in the 1920s and 1930s. The term "atopy", taken from the Greek meaning "strange disease", was introduced in 1923 by Coca and Cooke[4] to describe two diseases that they believed had much in common, namely asthma and hay-fever – or allergic rhinitis. The characterization of AD was attributed to Sulzberger,[5] and in 1934, Coca included this condition under his definition of "atopic".[6] The essential features of an atopic disease were defined as a familial predisposition to allergic disease affecting the skin, respiratory and/or gastrointestinal tract. The discovery of their association with skin-sensitizing antibodies resulted from the earlier seminal studies of Prausnitz and Küstner.[7] The latter was exquisitely sensitive to cooked fish and not to raw fish. The antibody responsible did not fix complement, did not precipitate with antigen and was not able to passively sensitize guinea pig skin. However, it was able to sensitize the skin of a nonallergic human recipient. Following the injection of Küstner's serum intradermally into the arm of Prausnitz, a wheal-and-flare reaction developed on subsequent challenge with cooked fish antigen. Prausnitz himself suffered from seasonal hay-fever and showed strong prick-test reactivity to ryegrass. However, paradoxically his serum was not able to sensitize the skin of Küstner in a similar manner.

This phenomenon was further investigated by Coca and Grove[8] who introduced the term "reagin" for this skin-sensitizing antibody. They confirmed that it was heat labile and that the skin-sensitizing ability was largely lost after heating the serum to 56°C for 30 min. They further showed that the skin of 11% of individuals was wholly nonreceptive to passive sensitization, and a further 5% were only partially receptive. There were difficulties, therefore, in using what came to be known as the Prausnitz–Küstner (or PK) test for quantitative studies. Much effort was expended over the ensuing four decades in characterizing further the nature of the reagin, and in determining to which antibody class it belonged. Finally, in the late 1960s the painstaking work of the Ishizakas, a husband and wife team, showed that it belonged to a hitherto undescribed antibody class that they designated γE, or as it later became known, immunoglobulin (Ig)E.[9]

2 Extrinsic and intrinsic atopic diseases

Only a few years after the discovery of IgE it became clear that not all cases of asthma were associated with elevated allergen-specific IgE,[10] and similar observations were made in relation to AD and rhinitis. This has led to the definition of two distinct variants of the three atopic diseases – "extrinsic", which is associated with elevated IgE levels to environmental and/or food allergens, and "intrinsic" which has no detectable IgE sensitization.[11] These also have been referred to respectively as "allergic" and "nonallergic". The pathogenesis of the latter is unclear, although as higher activation of all inflammatory pathways assessed – including Th2 – has been shown in the latter,[12] the term "nonallergic" appears to lack justification. These variants show not only immunological differences, but also differing clinical spectra.[11] In humans, it is estimated that 16–45% of cases of AD are intrinsic,[13,14] 10–33% of cases of asthma are intrinsic[15,16]and, likewise, 9–42% patients with rhinitis lack any association with IgE.[17]

3 The atopic march

Patients can present with more than one manifestation of atopic disease at the same time, and there is a tendency for atopic individuals to first exhibit signs of AD in childhood, and then progress to develop asthma and/or allergic rhinitis.[18] In one study conducted in the UK, 100 infants from atopic families were followed over a 22 year period.[19] By 1 year of age, 20% of the children had developed AD, and the incidence had declined to 5% by the end of the study. Over the same period, the incidence of allergic rhinitis increased from 3% to 15%, and the

proportion of patients that developed a wheeze indicative of asthma increased to 40%.[19] However, the legitimacy of the term "atopic march" has recently been questioned and differing factors have been suggested to play a role in the changing spectrum of the diseases over time.[20]

To what extent do feline allergic diseases satisfy criteria as being atopic in nature?

1 Is there evidence of a genetic basis?

The study of feline genetics is in its infancy, yet several pieces of evidence suggest a possible genetic basis for feline allergic diseases.

The first is contained in a report of dermatitis and vomiting with accompanying eosinophilia in eight of 26 (31%) individuals in an inbred colony of cats from Hungary which was attributed to food allergy.[21] The clinical signs in all eight resolved on feeding a hypoallergenic diet and a relapse was noted in four cases following dietary challenge.

The second was a description of three 12-month-old domestic short hair cat littermates, all of whom were reported to rub their faces, lick their abdomens, and bite and nibble their legs.[22] The condition had gradually worsened from the onset at 6 months of age. Upon presentation, the facial whiskers were bent and broken, and the commissures of the mouth were erythematous. There was a mild ceruminous otitis externa, thinning of the hair on the ears and ventral abdomen, and focal areas of hair loss on the extremities. One cat was more severely affected with crusting lesions on the face with linear excoriations, and a severe ceruminous otitis externa. The condition was unresponsive to a hypoallergenic diet trial. A year later intradermal tests (IDTs) revealed multiple sensitivities, and all three showed a good response to allergen-specific immunotherapy (ASIT), with minor relapses at the height of the pollen season. These features are entirely compatible with a diagnosis of atopy. The mother of the cats also was reported to suffer seasonal outbreaks of crusting and scabs on the head and neck, yet further investigations were not permitted.

Data derived from reports of case series also have identified some breed predispositions. In a multicentre study of 588 pruritic cats, 381 were diagnosed as suffering from a hypersensitivity dermatosis (HD).[23] They were first subdivided into those suffering from flea allergy dermatitis (FAD) (n = 146) and nonflea HD (n = 235), with the latter group comprising food HD and nonflea/nonfood HD. Pure-bred cats (Siamese, Persian, Abyssinian and Maine coon) were significantly over-represented in the latter group as compared with the former, which the authors interpreted as indicating a possible genetic basis for this group of diseases. The second report from Australia described 45 cases with signs compatible with AD, all of which failed to respond to flea control and hypoallergenic diet trials.[2] Compared to the base clinic population, domestic mixed breeds, Abyssinian and Devon rex were predisposed. In a further report of 194 cases of AD seen at a teaching hospital, Abyssinians, Himalayans and Persians were over-represented,[24] and the Abyssinian also was implicated in a report from Germany[25] which described five related Abyssinian cats that developed cardiomyopathy, three of which that also developed a pruritic dermatitis. Although this was not fully characterised, it was compatible with AD. In two cases, the skin disease was accompanied by episodes of rhinitis and conjunctivitis and the cats showed peripheral eosinophilia. The same two cats developed anaphylaxis following both vaccination and administration of penicillin.

2 Is there evidence for the involvement of IgE?

The most definitive evidence for the involvement of IgE in a feline allergic disease comes from an early description (1968) of a cat presented with concomitant dermatitis and enteritis.[26] An IDT was positive to cow's milk antigen and its serum yielded a positive PK test. Hypoallergenic diet trials and subsequent challenges confirmed the diagnosis of food allergy. The cat belonged to a veterinarian, and the immunological workup was performed by two other veterinarians who were amongst the leading immunologists of the day. One wonders how many similar cases have occurred over the years, but were not fully characterized owing to the lack of requisite expertise.

The role of IgE is discussed in detail later in this series where data from studies of cats with suspected allergic dermatitis (excluding flea allergy and mosquito bite hypersensitivity) and asthma are examined. Parameters assessed as being suggestive of the involvement of IgE include responses to atopy patch tests, the incidence of positive IDT and positive serology for allergen-specific IgE (compared to control populations), the effects of allergen avoidance and also the response to ASIT, which has long been regarded as a classical feature of IgE-mediated allergic diseases. The stated overall conclusion is that: "the evidence reviewed in this paper is supportive of the role of IgE – albeit not strongly so." However, if an intrinsic form of allergic dermatitis and/or asthma were to exist in the cat, one would not expect 100% correlation with the presence of allergen-specific IgE.

3 Is the spectrum of allergic diseases in cats similar to the atopic diseases of man, and has an "atopic march" been shown to exist in this species?

Cats suffering from dermatitis of presumed allergic origin exhibit varying presentations – yet none of them can be termed "classic" for AD when compared to the human and canine diseases. This perhaps stems from the limited spectrum of reaction patterns exhibited by cats, with apparently identical presentations arising from a wide range of unrelated causes. They also may suffer from enteritis that sometimes appears to be allergic in origin, and asthma is frequently encountered in clinical practice. Although the aetiology of the latter is controversial and could in some instances be intrinsic, a model of allergic asthma has been developed in cats, which closely parallels the spontaneous disease of humans.[3] As a further example, a case of seasonal allergic rhinitis has been described in a Japanese domestic cat whose clinical signs were strikingly similar to those seen in seasonal rhinitis (or "hay-fever") in humans,[27] and the serum was

positive for IgE against Japanese Cedar (*Cryptomeria japonica)* both by serology and PK testing.

Justification for the existence of an "atopic state" in the cat would be strengthened if more than one of these possible atopic diseases were seen in the same patient, and if there was evidence of an "atopic march". Concomitant skin and gastrointestinal disease was seen in the two reports of food allergy noted above – one in a single cat[26] and one in a colony of cats[21] – and also in five of 22 (23%) diet-responsive cases in a study from New Zealand.[28] In all of these cases the gastrointestinal and dermatological signs both responded completely to the dietary change. However, partial responses to a hypoallergenic diet also may be encountered. In one early report, five of 90 cats (6%) evaluated with a possible diagnosis of atopy responded partially to the diet trial indicating concomitant reactivity to foods and environmental allergens,[29] and in one of the case series noted above, food allergy accompanied six of 45 (13%) of cases diagnosed with AD.[2] Also in a retrospective analysis of 194 cases accorded a diagnosis of AD at a veterinary teaching hospital, nine cats (4.5%) were adjudged to have concomitant food allergy.[24]

Concomitant dermatological signs and upper or lower respiratory tract disease also have been reported. Rhinitis was noted in five of 10 cases of atopy in one case series,[29] and conjunctivitis was reported in two of 45 cases (4.4%)[2] and six of 100 (6%)[22] cases diagnosed as AD and nonflea/nonfood HD, respectively, in two other papers. Lower respiratory signs diagnosed as probable or definite asthma accompanied AD in three of 45 (6.6%) and six of 100 (6%), respectively, in the two case series noted earlier,[2,21] and also in one recent case report.[30] In another publication, a series of cats seen by the cardiopulmonary service of a university teaching hospital for evaluation of probable asthma, and stated to be free of skin disease, were referred to the dermatology service for performance of IDTs and for allergy-specific IgE serology. Upon dermatological examination "a number" (not quantified) had to be removed from the study, as signs compatible with allergic skin disease were observed.[31] It is possible, therefore, that the co-existence of signs involving more than one system might be more common than is reported, as some cases may have been denied a sufficiently rigorous workup. Nevertheless, at this time, there is no indication that an "atopic march" occurs in this species.

Conclusions and proposed nomenclature

From the literature reviewed above, it can be concluded that the feline diseases of presumed allergic aetiology have some features comparable to those seen in the human atopic diseases and canine AD. Strong evidence of a genetic basis is missing thus far – the state of feline genetics research has not yet permitted the necessary investigations. Despite this, the fact that cats can suffer from the triad of allergic dermatitis, allergic enteritis and asthma, often in combination and with some evidence for the involvement of IgE, provides justification for designating these as likely atopic diseases. More detailed in-depth investigations are needed in order to assess the existence or otherwise of intrinsic variants that would explain the lack of a stronger association with IgE. Bearing all of these limitations in mind, the following terminology is proposed:

Feline atopic syndrome (FAS)
This description encompasses allergic dermatitis associated with environmental allergens, food allergy and asthma that may be associated with IgE antibodies. Food allergy and flea allergy can both either mimic and/or contribute to this syndrome, and their potential role must be assessed before deciding on the therapeutic approach.

Feline atopic skin syndrome (FASS)
An inflammatory and pruritic skin syndrome of cats manifested by a spectrum of reaction patterns, none of which are specific for this syndrome, and that may be associated with IgE antibodies to environmental allergens. Food allergy and flea allergy can both either mimic and/or contribute to this syndrome, and their potential role must be assessed before deciding on the therapeutic approach.

Feline asthma
An eosinophilic inflammatory disease affecting the bronchioles and leading to spontaneous reversible bronchoconstriction and airway remodelling, manifested by acute respiratory distress or chronic coughing and expiratory wheezing, and that may be associated with IgE antibodies to inhaled allergens.

Intrinsic and extrinsic diseases
The definitions applied to FASS and to feline asthma do not preclude the possibility that extrinsic and intrinsic (in which no relevant IgE reactivity is demonstrable) variants of both may exist with intrinsic FASS being analogous to atopic-like dermatitis of dogs.

Feline food allergy
This aetiological diagnosis refers to any clinical manifestations, including those of FASS, that are attributable to immunological reactivity to an ingested food item.

Specifically excluded from the atopic designation are feline flea allergy dermatitis and mosquito-bite hypersensitivity.

Note: In this and subsequent papers in this series, allergen-specific immunotherapy (abbreviated as ASIT) refers to treatment with a series of allergen injections whose composition is based upon results of IDT and/or allergen-specific IgE serology.

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Résumé

Contexte – Les maladies allergiques félines représentent un défi clinique, en raison du nombre de patrons réactionnels de la peau féline, dont aucun n'est spécifiquement allergique. En outre, il y a controverse sur la nomenclature devant être utilisée pour leur description.

Objectifs – Reviser la littérature, déterminer le statut des connaissances du sujet et à quel point ces maladies peuvent être catégorisées de nature atopique et faire des recommandations concernant la nomenclature.

Méthodes – Les maladies atopiques chez l'homme et le chat sont étudiées. Une comparaison a été faite sur les critères essentiels des deux espèces.

Résultats – Il y a avait des similitudes suffisantes entre les maladies atopiques de l'homme et les manifestations des maladies félines présumées allergiques justifiant l'utilisation du terme « atopique » pour décrire certaines des atteintes du chat touchant la peau, le système respiratoire et gastro-intestinal. Cependant, aucune des maladies allergiques ne montre de caractéristiques compatibles avec la dermatite atopique telle que décrite chez l'homme et le chien.

Conclusions et importance clinique – Le terme « Feline Atopic Syndrome » (FAS) est proposé pour correspondre aux maladies allergiques cutanées, respiratoires et gastro-intestinales du chat et « Feline atopic skin syndrome » (FASS) est proposé pour décrire la dermatose allergique associée aux allergies environnementales. Nous n'avons pas connaissance de réactions indésirables alimentaires chez le chat qui seraient attribuables à d'autres réactions qu'immunologiques contre le nourriture elle même. Nous proposons ainsi une définition étiologique de l'allergie alimentaire (FA) pour décrire de tels cas.

Resumen

Introducción – las enfermedades alérgicas felinas se presentan como problemas desafiantes para los clínicos, sobre todo por la cantidad de formas de reacción de la piel felina, ninguno de los cuales es específico para la alergia. Además, existe cierta controversia sobre la nomenclatura que debería utilizarse en su descripción.

Objetivos – Revisar la literatura, evaluar el estado del conocimiento del tema y hasta qué punto estas enfermedades podrían ser categorizadas como de naturaleza atópica, y hacer recomendaciones sobre la nomenclatura.

Métodos – se investigaron las enfermedades atópicas en humanos y gatos. Luego se realizó una comparación de las características esenciales en las dos especies.

Resultados – Hubo suficientes similitudes entre las enfermedades atópicas humanas y las manifestaciones de las enfermedades felinas de supuesta etiología alérgica para justificar el uso de "atópicos" para describir algunas de las afecciones felinas que afectan la piel, el tracto respiratorio y gastrointestinal. Sin embargo, ninguna de las enfermedades alérgicas de la piel mostró características compatibles con la dermatitis atópica descrita en el hombre y el perro.

Conclusiones e importancia clínica – Se propone que el término "síndrome atópico felino" (FAS) abarque las enfermedades alérgicas de la piel, el tracto gastrointestinal y el tracto respiratorio, y el "síndrome de piel atópica felina" (FASS) se propone para describir la enfermedad alérgica cutánea asociada con alergias. No tenemos conocimiento de reacciones adversas a los alimentos en gatos que sean atribuibles a causas distintas de las reacciones inmunológicas frente a el alimento en sí. Por lo tanto, proponemos una definición etiológica de "alergia alimentaria" (FA) para describir estos casos.

Zusammenfassung

Hintergrund – Allergische Erkrankungen der Katzen stellen für KlinikerInnen herausfordernde Probleme dar, nicht zuletzt aufgrund der Anzahl an Reaktionsmustern in der Katzenhaut, von denen keines spezifisch ist für eine Allergie. Weiters besteht eine gewisse Kontroverse in Bezug auf die Nomenklatur, welche bei ihrer Beschreibung verwendet werden sollte.

Ziele – Eine Review der Literatur, ein Erfassen des Wissensstandes der Thematik und des Ausmaßes, in dem diese Erkrankungen als atopischer Natur kategorisiert werden können, sowie Empfehlungen in Bezug auf die Nomenklatur auszusprechen.

Methoden – Es wurden atopische Erkrankungen bei Menschen und bei Katzen untersucht. Danach wurde ein Vergleich der wesentlichen Merkmale bei den beiden Spezies erstellt.

Ergebnisse – Es bestanden ausreichende Ähnlichkeiten zwischen der atopischen Dermatitis des Menschen und der Erscheinungsformen der Erkrankungen bei den Katzen mit vermeintlicher allergischer Ätiologie, um die Verwendung des Begriffs „atopisch" zu rechtfertigen und um einige der Zustände, die die Katzenhaut, sowie den Respirationstrakt und Gastrointestinaltrakt betreffen können, zu beschreiben. Es zeigte jedoch keine der allergischen Hauterkrankungen Merkmale, die mit der atopischen Dermatitis wie sie beim Menschen und beim Hund beschrieben ist, übereinstimmten.

Schlussfolgerungen und klinische Bedeutung – Es wird vorgeschlagen, dass der Ausdruck „Felines Atopische Syndrom" (FAS) verwendet wird, um allergische Erkrankungen der Haut, des Gastrointestinaltrakts und des Respirationstrakts zu umfassen und der Ausdruck „Felines atopisches Hautsyndrom" (FASS) zur Beschreibung allergischer Hauterkrankungen im Zusammenhang mit Umweltallergien. Es ist uns nichts bekannt über Nebenwirkungsreaktionen von Futter bei Katzen, welche anderen immunologischen Reaktionen außer jenen direkt gegen das Futter zugerechnet werden könnten. Daher schlagen wir eine ätiologische Definition von „Futterallergie" (AF) bei der Beschreibung dieser Fälle vor.

要約

背景 – 猫アレルギー性疾患は臨床医にとって挑戦的な問題として存在する。特に猫の皮膚反応パターンの数が多いため、アレルギーに特異的な皮膚反応パターンはない。さらに、それらの説明で使用されるべき用語についていくつかの論争がある。

目的 – 本研究の目的は、文献をレビューし、トピックに関する知識の状態および、これらの疾患が本質的にアトピーとして分類される範囲を評価し、命名法に関する推奨事項を作成することであった。

方法 – 人および猫アトピー性疾患を調査した。次に、2種の本質的な特徴を比較した。

結果 – ヒトアトピー性疾患と推定アレルギー病因の猫疾患の症状との間に十分な類似性があり、皮膚、呼吸器、胃腸管に影響を与える猫の状態のいくつかを説明する「アトピー」の使用を正当化した。しかし、アレルギー性皮膚疾患はいずれも、ヒトやイヌで記述されているように、アトピー性皮膚炎と一致する特徴を示さなかった。

結論と臨床的重要性 – 「猫アトピー症候群」 (FAS) という用語は、皮膚、消化管、呼吸器のアレルギー性疾患を説明するために提案され、「猫アトピー性皮膚症候群」 (FASS) は、環境アレルギー関連アレルギ性皮膚疾患を説明するために提案された。猫自身の食物免疫反応以外の原因による猫の食物有害反応

については、知られていない。したがって、このような場合を説明するために、「食物アレルギー」(FA) の病因学的定義を提案する。

摘要

背景 — 猫过敏性疾病对临床医生来说是一个具有挑战性的问题，尤其是因为猫皮肤反应模式有多种，每一种对于过敏都不具有特异性。此外，用于描述的命名存在一些争议。

目的 — 回顾文献，评估对该主题的了解状态，以及这些疾病归类为特应性 (异位性) 的程度，并提出关于命名的建议。

法 — 研究人类和猫的特应性疾病。然后对两个物种的基本特征进行了比较。

结果 — 人类特应性疾病和推测病因为过敏症的猫的表现之间有足够的相似性，证明使用"特应性"描述猫的一些皮肤、呼吸道和胃肠道症状是合理的。然而，过敏性皮肤病均未显示与人和犬中描述的特应性皮炎一致的特征。

结论和临床重要性 — 术语"猫特应性综合征"(FAS)描述包括皮肤、胃肠道和呼吸道过敏性疾病，术语"猫特应性皮肤综合征"(FASS)描述环境引起的过敏性皮肤病。我们尚不清楚猫是否会发生食物不良反应，这些不良反应是造成对食物本身免疫反应以外的其他原因。因此，我们提出了"食物过敏"(FA)的病因学定义来描述此类病例。

Resumo

Contexto – As doenças alérgicas felinas apresentam-se como problemas desafiadores para os clínicos, sobretudo devido ao número de padrões de reação da pele felina, nenhum dos quais é específico para alergia. Além disso, existe alguma controvérsia sobre a nomenclatura que deve ser usada em sua descrição.

Objetivos – Revisar a literatura, avaliar a situação do conhecimento sobre o tema e até que ponto essas doenças podem ser classificadas como sendo de natureza atópica e fazer recomendações quanto à nomenclatura.

Métodos – Foram pesquisadas doenças atópicas em humanos e gatos. Em seguida, realizou-se uma comparação das características essenciais das duas espécies.

Resultados – Havia semelhanças suficientes entre doenças atópicas humanas e as manifestações de doenças felinas de etiologia alérgica presumida para justificar o uso de "atópico" para descrever algumas das condições felinas que afetam a pele, o trato respiratório e gastrointestinal. No entanto, nenhuma das doenças cutâneas alérgicas mostrou características consistentes com dermatite atópica, conforme descrito no homem e no cão.

Conclusões e importância clínica – O termo "Síndrome Atópica Felina" (SAF) é proposto para abranger doenças alérgicas da pele, trato gastrointestinal e trato respiratório, e o termo "Síndrome atópica cutânea felina" (SACF) é proposto para descrever dermatopatias alérgicas associadas a alergias ambientais. Não temos conhecimento de quaisquer reações adversas aos alimentos em gatos que sejam atribuíveis a outras causas além das reações imunológicas contra o próprio alimento. Portanto, propomos uma definição etiológica de "Alergia Alimentar" (AA) para descrever tais casos.