

Subcutaneous And Sublingual Immunotherapy In A Mouse Model

OBJECTIVES: To evaluate the efficacy and safety of subcutaneous immunotherapy (SCIT) and sublingual immunotherapy (SLIT) in the treatment of allergic asthma. **DATA SOURCES:** We searched PubMed, Embase, and CENTRAL through May 8, 2017. **METHODS:** Two reviewers independently selected randomized controlled trials (RCTs) of the efficacy of SCIT and SLIT and RCTs, observational studies, and case series or case reports on safety. Two reviewers independently assessed the risk of bias for each study and together graded the strength of the evidence. **RESULTS:** We identified 54 RCTs on efficacy: 31 assessed SCIT and 18 assessed SLIT and 5 on SCIT versus SLIT. We included 80 studies on safety: 26 RCTs and 18 non-RCTs for SCIT, 20 RCTs and 10 non-RCTs for SLIT and one non-RCT on SCIT versus SLIT. SCIT reduces the use of long-term control medications [moderate strength of evidence (SOE)]. SCIT may improve quality of life, reduce the use of quick-relief medications (short-acting bronchodilators), reduce the need for systemic corticosteroids, and improve FEV1 (low SOE). There was insufficient evidence regarding the effect of SCIT on asthma symptoms and health care utilization. Local and systemic allergic reactions were frequent but infrequently required a change in treatment. We are unable to draw conclusions about whether SCIT increased risk of anaphylaxis, primarily because anaphylaxis was not directly measured (insufficient SOE). There was one case report of a death determined possibly to be caused by SCIT. SLIT improves asthma symptoms (high SOE); decreases use of long-term control medication and improves FEV1 (moderate SOE). SLIT may decrease quick-relief medication use, and may improve quality of life (low SOE). There was insufficient evidence about the effect of SLIT on systemic corticosteroid use and health care utilization. Local and systemic allergic reactions were common but infrequently required changes in treatment. Life-threatening reactions were not commonly reported, with three case reports of anaphylaxis (insufficient SOE) and no deaths (moderate SOE) reported. There was insufficient evidence to draw conclusions about the comparative effects of SCIT versus SLIT or for differential effects of immunotherapy based on patient age, setting of administration, or type of allergen. **CONCLUSIONS:** Overall, SLIT and SCIT were beneficial for the majority of asthma-related outcomes assessed in this report. Local and systemic allergic reactions were common but infrequently required changes in treatment. Life-threatening events (such as anaphylaxis) were reported rarely.

One hundred years have elapsed since specific allergen immunotherapy (SIT) was first employed and found to be effective in the treatment of allergic respiratory diseases. This cutting-edge issue of Immunology and Allergy Clinics offers a comprehensive review of this disease modifying treatment, exploring its history, status, and potential future. Topics covered include the mechanisms of subcutaneous allergen immunotherapy; the mechanisms of sublingual immunotherapy; optimizing efficacy of subcutaneous immunotherapy; preparation of allergen immunotherapy extracts; risk factors and subcutaneous immunotherapy safety; accelerated schedules and reducing risk with premedication (antihistamines, omalizumab, leucotriene antagonist); safety and efficacy of sublingual immunotherapy for allergic respiratory disease and other indications; monitoring clinical outcomes of specific immunotherapy; monitoring immunotherapy response with immunological parameters; socioeconomic and comparative effectiveness of immunotherapy; oral desensitization for food hypersensitivity; peptide and recombinant immunotherapy; intralymphatic and epicutaneous allergen-specific immunotherapy; peptide and recombinant immunotherapy; adjuvants and vector systems for allergy vaccines; and future forms of immunotherapy.

This issue of Immunology and Allergy Clinics of North America brings the clinician up to date on essential topics in rhinitis, including the following. The primary clinical symptoms and their causes are defined. The wide range of current treatments are discussed, including the use of antihistamines, nasal corticosteroids, anticholinergics, decongestants, cromolyn, guafenesin, saline washes, capsaicin, and leukotriene antagonists. The efficacy of allergy avoidance is discussed. The future treatment of rhinitis is also explored. The current understanding of the pathophysiology of allergic rhinitis is covered. The definition, clinical characteristics, and diagnosis of nonallergic rhinopathy are also covered. Causes of rhinitis are presented, including causes of mixed, gustatory, viral, hormonal, pregnancy-related rhinitis medicamentosa; and senile rhinitis. A discussion and comparison of subcutaneous versus sublingual immunotherapy is also explored.

The lack of medication for allergy symptoms at the end of the last millennium has been the promoter of the idea of treating allergies as if you were treating an infectious disease, by vaccination prophylaxis. Two forms of AIT 1) subcutaneous immunotherapy (SCIT) and 2) sublingual immunotherapy (SLIT) are used in the world. Considerable interest has emerged in SLIT both scientifically and especially financially. SLIT is not a new treatment modality. First description dates back to 1900 when H. Curtis. It was relatively widely used until the late 1970's mainly in US by homeopathic therapists.

Comparative Effectiveness Review

New Mechanisms and Strategies

Childhood Asthma

Immunotherapies for Allergic Disease

Subcutaneous Immunotherapy for the Treatment of Allergies

Middleton's Allergy Essentials E-Book

The sixth edition of Lockey and Ledford's Allergens and Allergen Immunotherapy continues to provide comprehensive coverage of all types of allergens and allergen vaccines, providing clinicians the essential information they need to accurately diagnose and treat all allergic conditions. With new and updated chapters, the sixth edition is the most up-to-date, single resource on allergy and immunotherapy. Key Features Completely revised and updated Detailed single source reference on allergy and immunotherapy to provide clinicians with essential information to make diagnoses and offer the best treatments

This is another attempt of InTechOpen to continue the dissemination of international knowledge and experience in the field of immunology. The present book includes a number of modern concepts of specialists and experts in the field of immunology, major topics and analyzing the history, current stage, and future ideas of application of modern immunomodulation. It is always a benefit, but also a compliment, to gather a team of internationally distinguished authors and to motivate them to contribute to the benefit of medical science and health practice. On behalf of all readers, immunologists, immunogeneticists, biologists, oncologists, microbiologists, virologists, hematologists, chemotherapists, health-care experts, as well as students and researchers, on my personal behalf, I would like to extend my gratitude and highest appreciation to InTechOpen for giving me the unique chance to be the editor of this exclusive book.

This volume presents a broad selection of cutting-edge methods and tools that will enable the reader to investigate the multi-faceted manifestations of inflammation. Inflammation: Methods and Protocols is divided into four sections: the first section covers the protocols investigating immune-mediated inflammatory disease models affecting barrier organs to the environment; the skin, the lung, and the intestinal and oral mucosa. The fourth section illustrates inflammatory disease models of the brain. Written in the highly successful Methods in Molecular Biology series format, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and tips, tricks, and avoiding known pitfalls. Authoritative and practical, Inflammation: Methods and Protocols aims to inspire the experienced investigator and the young experimenter alike to disentangle the fascinating process of inflammation.

The development of the Chronic Care Model (CCM) for the care of patients with chronic diseases has focused on the integration of taking charge of the patient and his family within primary care. The major critical issues in the implementation of the CCM are the non-application of the best practices, defined by EBM guidelines, the lack of care coordination and active follow-up of clinical outcomes, and by inadequately trained patients, who are unable to manage their illnesses. This book focuses on the value of an integrated approach to some chronic conditions, the value of the care coordination across the continuum of the illness, the importance of an evidence-based management, and the enormous value of the patients involvement in the management of their conditions, without forgetting the essential role of the caregivers and the community when the diseases become profoundly disabling.

Kendig and Chernick's Disorders of the Respiratory Tract in Children E-Book

Allergy and Allergen Immunotherapy

Subcutaneous, Sublingual, and Oral

The First Steps of the Atopic March

Update in Immunotherapy for Aeroallergens, Foods, and Venoms, an Issue of Immunology and Allergy Clinics of North America

Methods and Protocols

Kendig, Chernick's Disorders of the Respiratory Tract in Children is the definitive medical reference book to help you confront critical challenges using the latest knowledge and techniques. You'll get the state-of-the-art answers you need to offer the best care to young patients. Tackle the toughest challenges and improve patient outcomes with coverage of all the common and rare respiratory problems found in newborns and children worldwide. Get a solid foundation of knowledge to better understand and treat your patients through coverage of the latest basic science and its relevance to clinical problems. Get comprehensive, authoritative coverage on today's hot topics, such as interstitial lung disease, respiratory disorders in the newborn, congenital lung disease, swine flu, genetic testing for disease and the human genome, inflammatory cytokines in the lung, new radiologic techniques, diagnostic imaging of the respiratory tract, and pulmonary function tests. Learn from the experts with contributions from 100 world authorities in the fields of pediatrics, pulmonology, neurology, microbiology, cardiology, physiology, diagnostic imaging, anesthesiology, otolaryngology, allergy, and surgery.

The incidence of allergies is increasing worldwide. Beside the well-established symptomatic treatments and subcutaneous immunotherapies, formerly known as de- or hyposensitization, a new form of treatment, local immunotherapy, has been developed in recent years. Local immunotherapy, though still controversially discussed, promises to be a curative, noninvasive, and easily applicable treatment for allergies. This volume summarizes the most current information on local immunotherapy compiled by internationally renowned specialists. In the methodology section, general aspects of local immunotherapy are presented including its history, allergen resorption and biodistribution, mechanisms of oral tolerance and practical experiences. The second section devoted to efficacy and safety presents findings from international placebo-controlled studies on nasal and sublingual immunotherapies with different allergens and for different allergic conditions including asthma and eczema. Possible side effects are also discussed. The concluding chapter critically evaluates the future prospects of this new method, pointing out still unresolved issues such as the exact immunological mechanisms, its long-term effects, or the standardization of dose and application intervals/duration. This state-of-the-art account will be of particular interest to scientists working in the field of allergy, clinical allergologists, pharmacists, and representatives from the pharmaceutical industry.

The prevalence of allergic diseases has increased dramatically over recent decades, both in terms of the number of sufferers and the number of allergies. This is a trend that has frequently been referred to as 'the epidemic of the 21st century'. As described in ancient texts, allergies have been known for over 2,000 years, but the term 'allergy' was only coined at the beginning of the 20th century when doctors began to understand their pathophysiological basis. This book presents a detailed and varied historical overview of the field of allergology. Beginning with insights on allergy from antiquity to the 20th century and the development of the associated terminology, it compiles historical reflections on the understanding of the most common allergic diseases.

Important milestones in the discovery of mechanisms of allergy are described, followed by historical accounts of the detection of allergens such as pollen, dust mites, peanuts and latex, and of environmental influences such as pollution and the relationship between farmers and their environment. Several chapters illustrate the progress made in allergy management to date. Particular highlights of this book are the personal reflections of and interviews with a number of pioneers of allergy, including F. Austen, J. Bienenstock, K. Blaser, A. de Weck, A.W. Frankland, K. Ishizaka, and many more. Concluding with portrayals of allergy societies and collections, as well as being supplemented by two films, this book represents a veritable treasure trove of fascinating and richly illustrated information. Not only researchers, physicians and medical historians, but also students and even non-scientists will find History of Allergy a scientific adventure well worth reading.

Get a quick, expert overview of the use of current and novel immunotherapies for use in the management and treatment of allergic reactions and diseases. This concise resource by Dr. Linda Cox covers the full range of allergic disease, including aeroallergens, asthma, food allergies, atopic dermatitis, and stinging insects. With essential coverage of allergen immunotherapies in addition to key topics on emerging allergen-associated immunomodulators, this succinct, comprehensive reference consolidates today's available information on this timely topic into a single convenient resource. Discusses timely topics such as food tolerance, allergy, and allergen unresponsiveness; biologics for COPD and pediatric asthma; and adherence and pharmacoconomics. Summarizes practical guidelines and recommendations for use of immunotherapies in clinical practice. Provides insight into the background and history of immunotherapies as a treatment for allergic disease. Includes developments on the horizon, including alternative immunotherapy routes and modified allergens.

Rhinitis, an Issue of Immunology and Allergy Clinics

Mechanisms and Management

Severe Asthma in Children and Adolescents

Challenges in Rhinology

Local Immunotherapy in Allergy

Comparative Effectiveness Review Number 111

This book provides readers with a comprehensive review of severe asthma in children and adolescents, covering epidemiology, genetics, risk factors, co-morbidities, clinical presentation, diagnosis and treatment. Written by leaders in the field, chapter discussions draw on the mechanisms driving the disease, genetics, multidisciplinary approaches, immunomodulators, and other important aspects in the management of the disease. Severe Asthma in Children and Adolescents: Mechanisms and Management is designed to be a practical guide, opening with an introduction on the epidemiology of severe childhood asthma, as well as a discussion of special considerations of the disease unique to the preschool-aged patient. The distinctions between the diagnosis and management of asthma in young children of various ages, and specific approaches for the adolescent with severe asthma, including the transition into adult care are then addressed. Finally, the book closes with a discussion on the current state and future avenues for severe asthma research. Severe Asthma in Children and Adolescents is an indispensable reference for the healthcare professional, for basic and translational researchers, as well as for students, residents and fellows.

This issue of Immunology and Allergy Clinics, guest edited by Drs. Linda S. Cox and Anna Nowak-Wegrzyn, is devoted to Immunotherapy for Aeroallergens, Foods, and Venoms. Articles in this issue include: Mechanism of Immunotherapy: Focus SCIT and SLIT; Subcutaneous Immunotherapy Safety: Incidence per surveys and risk factors; Sublingual Immunotherapy for Other Indications: Venom large local, latex, atopic dermatitis and food; Questions and Controversies regarding venom immunotherapy; Socioeconomics or Comparative Effectiveness of Immunotherapy; Risk Reduction in Peanut Immunotherapy; Food OIT with Adjuvants; Peanut OIT: State of the art; Evolution of Immune Responses in Food Immunotherapy; Safety of Food Oral Immunotherapy: What we know and what we need to learn; Novel Vaccines for Food Allergy; IgG and IgE in Food Allergy - What's the connection?; and Sublingual and Patch Immunotherapy for Food Allergy.

Get a quick, expert overview of the many key facets of today's otolaryngology practice with this concise, practical resource. Dr. Luke Rudmik and a leading team of experts in the field address high-interest clinical topics in this fast-changing field. Presents an evidence-based, clinical approach to leading topics in otolaryngology. Covers key topics such as management of vertigo; management of adult sensorineural hearing loss; reflux in sinusitis; balloon catheter dilation in rhinology; epistaxis; functional rhinoplasty; sublingual immunotherapy for allergic rhinitis; pediatric obstructive sleep apnea; pediatric tonsillectomy; evaluation and management of unilateral vocal fold paralysis; management of hoarseness; endoscopic skull base resection for malignancy; management of glottic cancer; management of well-differentiated thyroid cancer; and management of the clinical node-negative neck in early stage oral cavity squamous cell carcinoma. Consolidates today's available information and experience in this challenging area into one convenient resource.

This fifth edition of the bestselling Allergens and Allergen Immunotherapy is now completely updated and revised to include subcutaneous, sublingual, and oral immunomodulator treatments of allergic disease. The redesigned book continues to provide comprehensive coverage of all types of allergens and allergen vaccines, giving clinicians the essential information they need to accurately make a diagnosis and offer the best possible treatments. The fifth edition contains many new and revised chapters—particularly in the fields of skin testing—and extensive updates to the sublingual and oral immunotherapy chapters. Key Features: Comprehensive – covers a vast range of allergens and allergen immunotherapies, providing all the necessary information in one volume Synoptic – supplies the essential information using figures and tables for instant access Up-to-date – includes the very latest information on subcutaneous, sublingual and oral allergen immunotherapies to offer the best possible treatments Reliable – provides basic information that all clinicians need to know about cross-reactivity among allergens and how it influences diagnosis and treatment, as well as the key information necessary to carry out any form of immunotherapy in a safe and effective manner Supplemental forms – contains template forms that can be used by the clinician in daily practice The fifth edition of this classic text continues to be an essential touchstone for any practitioner who conducts skin tests and prescribes subcutaneous, sublingual, and oral immunotherapies.

Immunotherapy

Subcutaneous, Sublingual, and Oral, Fifth Edition

Immunotherapy in Asthma

Allergy, Immunity and Tolerance in Early Childhood

Allergy Frontiers:Clinical Manifestations

Vaccines against Allergies

Respiratory allergic diseases (also known as allergies), such as rhinitis, asthma, and conjunctivitis, affect more than 400 million people globally and are on the rise in industrialized countries. Allergies result from hypersensitivity to various allergens, such as airborne particles, food, and drugs. They are treated with pharmacotherapy (in the form of antihistamines or corticosteroids), but moderate-to-severe allergic reactions require specific allergen immunotherapy (SIT). SIT involves administering gradually increasing doses of extracts of the causative allergen to which a patient is allergic to reduce the clinical reactions of allergic patients. Alternative forms of SIT for respiratory allergies include intralymphatic immunotherapy (ILIT), oral immunotherapy (OIT), local nasal immunotherapy (LNIT), and sublingual immunotherapy (SLIT). The purpose of this Rapid Response review is to provide a comparative clinical effectiveness and cost-effectiveness of subcutaneous (or injectable) immunotherapy (SCIT), sublingual immunotherapy (SLIT), and oral antihistamines in patients with allergies, and to identify published, evidence-based guidelines on the use of SCIT or SLIT for the treatment of allergic diseases. Allergens and Allergen ImmunotherapySubcutaneous, Sublingual, and OralCRC Press

When I entered the field of allergy in the early 1970s, the standard textbook was a few hundred pages, and the specialty was so compact that texts were often authored entirely by a single individual and were never larger than one volume. Compare this with Allergy Frontiers: The Atopic March s- volume text with well over 150 contributors from throughout the world. This book captures the explosive growth of our specialty since the single-author textbooks referred to above. The unprecedented format of this work lies in its meticulous attention to detail yet comprehensive coverage of a wide range of topics. The book includes 150 manuscripts dealing with topics such as "Exosomes, naturally occurring minimal antigen presenting units" and "Neuropeptide S receptor 1 (NPSR1), an asthma susceptibility gene." The scope is exemplified by the unique approach to disease entities normally dealt with in a single volume, a topic usually confined to one chapter in most textbooks, is given five chapters in Allergy Frontiers. This approach allows the text to employ multiple contributors for a single topic, giving the reader the advantage of being introduced to more than one viewpoint regarding a single topic. Researchers and clinicians relate their experience with immunotherapy using antigens, which has remained important throughout the enormous advances in immunology over the past 30 years. Among the topics are a historical perspective, outdoor and indoor allergens, venoms, and the role of the microbiome.

Respiratory Regulation - The Molecular Approach

Sublingual and Injectable Customized Allergy Immunotherapy

Inflammation

An Otolaryngic Approach

Allergy and Immunology

Written by well-known, widely published experts, this volume is a comprehensive text on otolaryngic allergy and all of its manifestations. The contributors thoroughly review relevant basic science, describe the diagnostic workup, and discuss patient management approaches, including environmental management, pharmacotherapy, immunotherapy, nutrition, and alternative and complementary therapies. A major portion of the book focuses on specific allergic disorders of the ear and respiratory system and related conditions such as ocular allergy, latex hypersensitivity, chemical sensitivities, autoimmune diseases, chronic fatigue syndrome, and fibromyalgia. Each of these chapters discusses treatment strategies in detail, using case studies to illustrate key principles of treatment.

Allergy and Allergen Immunotherapy: New Mechanisms and Strategies is a valuable and comprehensive book that covers allergy and causative allergens and provides diagnostic and therapeutic aspects as well. With chapters from internationally recognized experts in the field, the book provides a balanced approach to enumerating pollen allergens as well as allergy diagnosis and therapeutic management and

safety assessment of genetically engineered food allergens. The book features a special section on allergic diseases and allergens from tropical countries, including such countries such as India, Sri Lanka, Iran, and South Korea, giving the book a global appeal. The book is broken in the following sections: Epidemiology, Pathophysiology, and Diagnosis of Allergy Aerobiology and Allergic Diseases Pollen Allergy in the Tropics and Temperate Regions Allergy in Children Food Allergy Evaluation Allergen Immunotherapy and Anti IgE The book deals not only on basics of allergy and allergen immunotherapy but also discusses indoor environments and safety considerations of genetically modified food allergens. The first of its kind volume from the Indian subcontinent that caters to the needs of clinicians, aerobiologists, environmentalists, and regulatory agencies as well, the volume will be of immense interest for clinicians and patients of allergy as well as diagnostic and therapeutic management of allergy in tropics.

Allergic rhinitis is a widespread clinical problem, estimated to affect 20 to 40 percent of the population in the U.S. Inhaled allergens, such as plant pollens, characteristically cause seasonal rhinoconjunctivitis and/or asthma; whereas, cat dander, cockroaches, or dust mite allergens may induce symptoms year-round, and are associated with perennial rhinitis and/or asthma. The prevalence of asthma in the U.S. is approximately 9 percent, and approximately 62 percent of individuals with asthma show evidence of also having atopy (i.e., one or more positive-specific IgE levels). The medical management of patients with allergic rhinitis and asthma includes allergen avoidance, pharmacotherapy, and immunotherapy. Allergen-specific immunotherapy (SIT) is typically recommended for patients whose allergic rhinoconjunctivitis and asthma symptoms cannot be controlled by medication and environmental controls, for patients who cannot tolerate medications, or for patients who do not comply with chronic medication regimens. Currently, two forms of specific immunotherapy are used clinically in the U.S. The U.S. Food and Drug Administration (FDA) has approved the use of allergen extracts for subcutaneous administration (subcutaneous immunotherapy) for the treatment of seasonal and perennial allergic rhinitis and allergic asthma. In the U.S., a patient with allergies receives subcutaneous injections of an allergen-containing extract, comprised of the relevant allergens to which the patient is sensitive, in increasing doses, in an attempt to suppress or eliminate allergic symptomatology. Considerable interest has also evolved in using sublingual immunotherapy as an alternative to subcutaneous injection immunotherapy. Sublingual immunotherapy involves placement of the allergen under the tongue for local absorption to desensitize the allergic individual over a period of months to years and diminish allergic symptoms. In 1996, an Immunotherapy Task Force, assembled by the World Allergy Organization, cited the emerging clinical data on sublingual immunotherapy, recognized its potential as a viable alternative to subcutaneous therapy, and encouraged continued clinical investigation to characterize optimal techniques. Over the past two decades, sublingual forms of immunotherapy have gained favor in Europe; sublingual tablet immunotherapy has been approved by the European regulatory authorities. In the U.S., there are currently no FDA-approved sublingual forms of immunotherapy. In the absence of FDA-approved sublingual forms of immunotherapy, some researchers and physicians in the U.S. are exploring the off-label use of subcutaneous aqueous allergens for sublingual desensitization. An increasing number of U.S. physicians are employing this alternate desensitization approach in the treatment of allergic respiratory conditions based on European and U.S. studies, and on the European Medicines Agency's approval of certain oral products; however, due to differing standardization of potency in Europe and the United States, doses have been hard to translate between countries. The primary objective of this comparative effectiveness review is to evaluate the efficacy, effectiveness, and safety of SIT (including both subcutaneous and sublingual immunotherapy) that are presently available for use by clinicians and patients in the U.S. We addressed the following Key Questions (KQs): KQ1. What is the evidence for the efficacy and effectiveness of SIT in the treatment of allergic rhinoconjunctivitis and/or asthma? KQ2. What is the evidence for safety of SIT in patients with allergic rhinoconjunctivitis and/or asthma? KQ3. Is the safety and effectiveness of SIT different in distinct subpopulations with allergic rhinoconjunctivitis and/or asthma? Specifically: Children, Adults, Elderly, Pregnant women, Minorities, Inner-city and rural residents, Monosensitized individuals, Patients with severe asthma.

This book examines in detail many rhinologic issues that are not covered in other books, are still not completely understood, and can be difficult to deal with clinically. In each chapter, three authors – a young otorhinolaryngologist, a senior author, and an international expert – elaborate on a specific issue, such as the role of immunotherapy in treating nasal polyps, the management of rhinitis during pregnancy, how rhinitis can differ in adults and children, how to choose between open or endonasal rhinoplasty, the ideal form of anesthesia for nasal surgery, etc. The volume will appeal to a wide readership, from otorhinolaryngologists to allergists and facial plastic surgeons, as well as trainees and students in related fields.

A Systematic Review and Economic Evaluation of Subcutaneous and Sublingual Allergen Immunotherapy in Adults and Children with Seasonal Allergic Rhinitis

History of Allergy

Myths, Reality, Ideas, Future

Allergen-specific Immunotherapy for the Treatment of Allergic Rhinoconjunctivitis And/or Asthma

Animal Models of Allergic Disease

Allergen Immunotherapy

It has not been yet clarified whether allergy and asthma are part of the same condition or they follow a parallel path. This Research Topic aims to try and put some light in this parallel march going through crucial topics: from prenatal events to later risk factors such as obesity; and from basic immunology to immunotherapy, both subcutaneous and sublingual. We hope the readers can infer their own conclusions as what is first: egg or chicken.

This volume provides protocols for mouse models of allergic diseases and guidelines for choosing a particular strain, allergen, adjuvant, and route of sensitization. Chapters detail types of allergic disease, methods that are frequently employed to analyze pathophysiology of allergic diseases, manipulation of intestinal microbiota, and desensitization of immune responses in animal models. Written in the highly successful Methods in Molecular Biology series format, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and tips on troubleshooting and avoiding known pitfalls. Authoritative and cutting-edge, Animal Models of Allergic Disease: Methods and Protocols aims to offer a comprehensive collection of protocols and experience-derived instructions to further allergic disease research.

OBJECTIVES: Allergic rhinitis is highly prevalent in North America, affecting 20 to 40 percent of the population. Nearly 9 percent of Americans suffer from asthma, with more than half having evidence of atopy. This comparative effectiveness review describes the effectiveness and safety of subcutaneous immunotherapy and sublingual immunotherapy (off-label use of subcutaneous-aqueous allergens for sublingual desensitization) compared with other therapies for treatment of allergic rhinoconjunctivitis and asthma. **DATA SOURCES:** We searched the MEDLINE(r), Embase, LILACS, and CENTRAL databases from the beginning of each database through May 21, 2012. **REVIEW METHODS:** Two reviewers independently selected randomized controlled trials according to established study inclusion criteria. Disagreements were resolved by consensus. Paired reviewers assessed the risk of bias of each study and extracted details about the population, intervention(s), and outcomes of interest. The results were summarized by immunotherapy type (sublingual or subcutaneous), allergen, and outcomes. Studies exclusively enrolling children were reviewed separately. The strength of the body of evidence was graded and summarized. **RESULTS:** We included 74 references that investigated the efficacy and safety of subcutaneous immunotherapy, 60 studies that investigated the efficacy and safety of sublingual immunotherapy, and 8 studies that compared the two modes of delivery. All 142 studies were randomized controlled studies. The majority of studies were at medium risk of bias due to design choices. The strength of evidence is high that subcutaneous immunotherapy reduces asthma symptoms, rhinitis symptoms, conjunctivitis symptoms, asthma medication use, asthma plus rhinoconjunctivitis medication use, and rhinoconjunctivitis-specific quality of life. The strength of evidence is moderate that subcutaneous immunotherapy reduces rhinoconjunctivitis medication use, relative to usual care, which includes pharmacotherapy. Likewise, the strength of evidence is high that sublingual immunotherapy reduces asthma symptoms. The strength of evidence is moderate that sublingual immunotherapy reduces rhinitis/rhinoconjunctivitis symptoms, combined symptom scores, conjunctivitis symptoms, and medication use relative to usual care, and improves allergy-specific quality of life. In studies comparing subcutaneous with sublingual immunotherapy, strength of evidence supporting the superiority of subcutaneous immunotherapy for reducing allergic rhinitis and conjunctivitis symptoms, and the superiority of sublingual immunotherapy for reducing medication use, is low. We identified 13 pediatric studies of subcutaneous immunotherapy, 18 pediatric studies of sublingual immunotherapy, and 3 pediatric studies comparing subcutaneous and sublingual immunotherapy. The strength of evidence is moderate that subcutaneous immunotherapy reduces asthma symptoms and rhinitis symptoms in comparison to usual care. The strength of evidence is low that subcutaneous immunotherapy reduces conjunctivitis symptoms, medication scores, combined symptom-medication scores, or improves quality of life relative to usual care. The strength of evidence is high that sublingual immunotherapy reduces asthma symptoms, and moderate that it reduces rhinitis/rhinoconjunctivitis symptoms, combined asthma plus rhinitis/rhinoconjunctivitis symptoms, conjunctivitis symptoms, and decreases medication use. While local reactions were frequent with both treatment regimens, there were rare reports of anaphylaxis in the subcutaneous immunotherapy studies, and no anaphylaxis reported in the sublingual immunotherapy studies. **CONCLUSIONS:** With some variation across outcomes, the overall body of evidence consistently provides moderate to high support for the effectiveness and safety of both subcutaneous and sublingual immunotherapy for the treatment of allergic rhinitis and asthma. The evidence to support the use of immunotherapy in children is somewhat weaker than the evidence supporting its use in adults. The superiority of one route of administration over the other is not known.

For decades, health care practitioners have relied on Middleton's Allergy as their go-to reference for comprehensive information on allergic disorders. Now Middleton's Allergy Essentials, by Drs. Robyn E. O'Hehir, Stephen T. Holgate, and Aziz Sheikh, offers a concise resource that's both easily accessible and highly authoritative. Perfect for clinicians in primary and secondary care settings, this practical volume covers what is most useful in your daily practice, with a strong emphasis on disease diagnosis and management. A practical approach to evaluation, differential diagnosis, and treatment of allergic disorders, focused specifically on what the non-specialist needs to know for everyday practice. Each chapter begins with a handy summary of key concepts to help you quickly identify important information. Coverage of today's hot topics includes asthma, drug allergies, food allergies and gastrointestinal disorders, anaphylaxis, atopic dermatitis, and allergic contact dermatitis. Concise sections on mechanisms are included where relevant, keeping you up to date with this rapidly evolving field. Authored by the same internationally recognized experts that produce Middleton's Allergy, the definitive text in the field. Ideal for physicians, residents, general and family practitioners, nurse practitioners, primary care doctors, hospitalists, general internists – anyone who is called upon to make effective diagnostic and treatment decisions regarding allergic disorders.

The Parallel March of Asthma and Allergy in Childhood: A Multi-Perspective Approach

Allergic Rhinitis and Asthma

A Review of the Clinical Efficacy, Safety and Guidelines

Evidence-Based Clinical Practice in Otolaryngology

The Role of Immunotherapy in the Treatment of Asthma

Subcutaneous and Sublingual Allergen Specific Immunotherapy in Experimental Models for Allergic Asthma

This reference collects the latest studies on the development, diagnosis, and treatment of childhood asthma and offers current perspectives on new technologies that will shape the management of pediatric asthma in the forthcoming decade illustrating how advances in pulmonary function measurement, inflammatory markers, imaging, and pharmacogenetics will enhance the diagnosis and monitoring of asthma in years to come.

We are celebrating this year the hundred years' anniversary of allergen-specific immunotherapy. In 1911 Leonard Noon published his seminal work "Prophylactic inoculation against hay fever" describing his attempts to achieve active immunity against "grass pollen toxin" by administering increasing doses of grass pollen extract before the grass pollen season to allergic patients. Although it was unknown at that time that allergy represents an immunological hypersensitivity disease, the treatment was effective and many observations made by Noon remained valid until today. Today allergen-specific immunotherapy is well established as the only allergen-specific and disease-modifying treatment for IgE-mediated allergies and has long-lasting effects. In fact, more than 25% of the population suffer from IgE-mediated allergies which therefore represent a major health burden of our society, particularly because untreated allergy often progresses to severe disabling forms of disease, such as asthma and sometimes kills sensitized people through anaphylaxis.

This issue of Immunology and Allergy Clinics, guest edited by Drs. Linda S. Cox and Anna Nowak-Węgrzyn, is devoted to Immunotherapy for Aeroallergens, Foods, and Venoms. Articles in this issue include: Mechanism of Immunotherapy:

Focus SCIT and SLIT; Subcutaneous Immunotherapy Safety: Incidence per surveys and risk factors; Sublingual Immunotherapy for Other Indications: Venom large local, latex, atopic dermatitis and food; Questions and Controversies

regarding venom immunotherapy; Socioeconomics or Comparative Effectiveness of Immunotherapy; Risk Reduction in Peanut Immunotherapy; Food OIT with Adjuvants; Peanut OIT: State of the art; Evolution of Immune Responses in Food

Immunotherapy; Safety of Food Oral Immunotherapy: What we know and what we need to learn; Novel Vaccines for Food Allergy; IgG and IgE in Food Allergy - What's the connection?; and Sublingual and Patch Immunotherapy for Food

Allergy.

This book, an international collaborative effort in the area of molecular respiratory research, showcases a broad range of multidisciplinary approaches to unravel and analyze the underlying mechanisms of a spectrum of respiratory ailments. It discusses immunological and genetic respiratory disorders, cancer, respiratory allergies and cough, sleep disordered breathing and many others. Exciting new results and up-to-date critical overviews of widely debated topics pertaining to respiratory disorders are presented. The contributions provide evidence for the growing interest of the international community of researchers in the field of respiration. The book incorporates modern molecular approaches to diagnostic and treatment solutions, underscoring the need for rational, evidence-based treatment methods. Combining cutting edge basic and clinical research with expert knowledge and experience this book is essential reading for medical students, research scientists and practicing specialists in pulmonology, immunology and allergology.

Allergen-Specific Immunotherapy for the Treatment of Allergic Rhinoconjunctivitis And/or Asthma: Comparative Effectiveness Review

Clinical and Cost-effectiveness and Guidelines

Novel Advances in Allergy Diagnosis and Treatment

Update in Immunotherapy for Aeroallergens, Foods, and Venoms, An Issue of Immunology and Allergy Clinics of North America E-Book

Systematic Review and Economic Evaluation of Subcutaneous and Sublingual Allergen Immunotherapy in Adults and Children with Seasonal Allergic Rhinitis

Primary Care in Practice

This massive reference thoroughly analyzes the mechanisms implicated in the pathophysiology of asthma, such as T helper lymphocyte subsets, and the consequences of various extrinsic and intrinsic factors, and IgE receptor expression-reviewing current concepts in immunotherapeutic approaches for the treatment of this and other allergic diseases. Investigates the only category of treatment showing the potential to affect the natural course of allergic diseases and prevent the onset of asthma. Written by more than 80 internationally renowned pulmonary experts, allergic disease specialists, and basic researchers, Immunotherapy in Asthma discusses the efficacy of new medications examines the role of metachromatic cells, lymphocytes, macrophages, and other cell types present in bronchial biopsies presents basic topics such as the functional and phenotypic properties of Th1 and Th2 cells and their role in allergic disease and the regulation of IgE-mediated inflammatory responses addresses the deleterious effects of smoking and passive exposure to cigarette smoke in children and adults assesses differences and similarities between intrinsic and antigen-induced asthma describes the effects of immunogenic peptides on the cytokine production profile of allergen-specific CD4+ T cells explains the different clinical aspects of allergic responses, such as bronchial hyperreactivity and eosinophilic inflammation of the airways reviews the genetic basis of allergy, as well as risk factors for asthma explores oral, sublingual, local nasal, and local bronchial routes for noninjective immunotherapies evaluates various agents with modulatory effects on normal and pathogenic immune responses focuses on strategies for the prevention of childhood asthma and more! Containing over 3000 references, drawings, and tables, Immunotherapy in Asthma is an indispensable resource for pulmonologists, immunologists, allergists, and medical school students in these disciplines.

Subcutaneous immunotherapy (SCIT) was introduced a century ago. It represents for the third most important mainstay offered to allergic patients and is currently the only means of altering the abnormal immune response that underlies allergic disease. SCIT involves the gradual administration of increasing amounts of allergen to induce protective immunologic responses over a period of three to five years. The beneficial effects are usually seen within the first year of treatment. The mechanisms of action of SCIT are multiple and complex. The allergens that are known to be effective for use in SCIT include several tree, grass, and weed pollens, cat and dog dander, dust mites, certain molds, and cockroaches. The allergen used could be single or mixture of multiple allergens. There is no standard approach for the specific allergens or dose schedule to guide clinical practice. Although SCIT is used worldwide, sublingual immunotherapy (SLIT) has been conducted with single allergen extracts more recently. SLIT is considered a viable alternative to SCIT and is used in many areas of Europe, Latin America, and Asia. SLIT has not been approved by the U.S. Food and Drug Administration for use in the United States. The purpose of this report to review the evidence of comparative clinical effectiveness and safety profile of SCIT compared with antihistamine, SLIT or placebo in patients with allergy diseases and identify the existing guidelines on SCIT in the treatment of allergy diseases.

Allergy, Immunity and Tolerance in Early Childhood: The First Steps of the Atopic March provides valuable insights on the atopic diseases, including asthma, allergic rhinitis, atopic dermatitis, and food allergies, which have developed into major health problems in most parts of the world. As the natural history of these chronic diseases has been extensively studied, including their major genetic, environmental, and lifestyle determinants and potential protective factors, the book presents tactics on how pediatric allergists can provide early intervention. In addition, the book unites key, global experts in the field who summarize their collective, and current, knowledge of the early stage of the "Atopic March", along with novel ideas for potential options of prevention. Summarizes the current knowledge of the epidemiological, genetic, and cellular basis of allergic diseases Ideal reference for the study of allergies in young children, atopic dermatitis, allergic rhinitis, childhood asthma, and food allergies Provides landmark findings in the field of immunology and allergy development Fulfills the need for a book that focuses on primary and secondary allergy prevention, especially during the first years of life Unites key, global experts in the field who summarize their collective, and current, knowledge, along with novel ideas for potential options of prevention

Integration is Needed

Allergens and Allergen Immunotherapy

Unmet Needs in Understanding Sublingual Immunotherapy to Grass Pollen