

Kai Guan

**Vice Chairman, Youth Committee, Chinese Society of Allergy
Vice Chairman, Youth Committee, Chinese College of Allergy
and Asthma**

**Secretary General, Allergy Specialist Branch of Beijing Medical
Doctor Association**

**Member of the standing committee, Apitherapy Specialized
Committee, World Federation of Chinese Medicine Societies**

**Member of the standing committee, Pediatric of Allergy-
Immunology-Rheumatology Branch, PAIRB-APAMBI**

Associate Professor, Assistant Director, Principal Investigator

**Allergy Department of PUMC Hospital, Chinese Academy of Medical Sciences &
Peking Union Medical College; Beijing Key Laboratory of Precision Medicine for
Diagnosis and Treatment of Allergic Diseases**

E-mail: dr_guankai@126.com



Insect Allergy in China

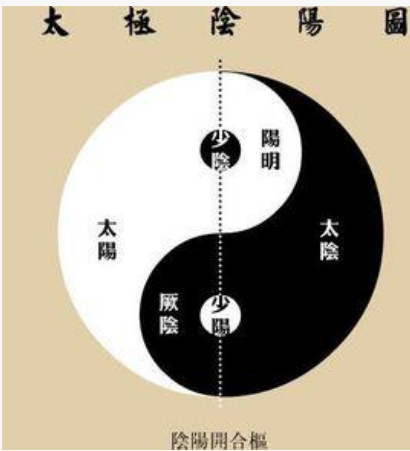
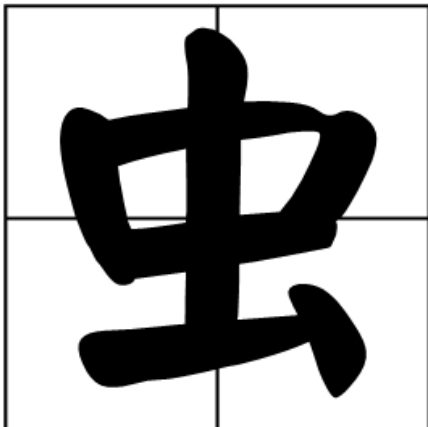
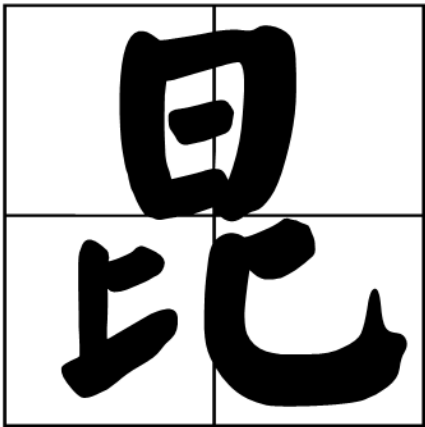


GUAN Kai MD

Allergy Department of Peking Union Medical College Hospital
Chinese Academy of Medical Sciences & Peking Union Medical College



Definition in chinese: Insect



《礼记·王制》“昆虫未蛰，不以火田。”
郑玄注：昆，明也。明虫者，得阳而生，得阴而藏。

**Insects,
which are born with Yang and hide with Yin.**



Arthropoda

Arachnoidea



8 legs

Spiders

Ticks

Scorpions

Insects



6 legs

Flies

Mosquitos etc

Hymenoptera

Bee, Wasp, Ants

Insect: Siphonaptera



北京协和医院
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Baidu 百科

rove beetle



Original articles

Asian ladybugs (*Harmonia axyridis*): A new seasonal indoor allergen

Takuya Nakazawa, MD, PhD,^a Shama M. Satinover, MS,^a Lisa Lucy Goddard, RN,^a Bojan P. Dragulev, PhD,^b Edward Peters, Thomas A. E. Platts-Mills, MD, PhD^a Charlottesville, Va, and Austi

Background: *Harmonia axyridis*, the Asian ladybug (ALB), was repeatedly introduced between 1916 and 1990. These beetles are intolerant to cold and move indoors during the winter.

Objective: To investigate sensitization to ALB.

Methods: Proteins in ALB extracts were purified by gel filtration and ion exchange chromatography. Purified fractions were screened for IgE antibody using the streptavidin CAP technique in sera from 20 patients with allergy living in ALB-infested houses. Two proteins were fully purified. Serum antibodies were also assessed in sera from 68 adult patients with asthma.

Results: Fifteen of the 20 sera had measurable IgE antibody, 7 with high titers, > 10 IU/mL, to ALB extract. The 2 proteins, Har a 1, 10 kd, and Har a 2, 55 kd, bound IgE antibody in 65% and 75% of the sera, respectively. Sequencing revealed a novel N-terminal sequence for Har a 1. Sequencing of Har a 2 demonstrated homology to a dehydrogenase from the red flour beetle. Although sera from 18 of the patients with asthma were positive for IgE antibody to ALB, they were also positive to *Blattella germanica*. These subjects did not report exposure to *H axyridis*, and inhibition studies with *B germanica* blocked $\geq 95\%$ of ALB IgE antibody binding.

Abbreviation used
ALB: Asian ladyb

repeatedly as an eco local, and federal er lieved that the beetle the cold winters. However, rather than freezing, these ladybugs swarm and invade houses in the early fall. The first reports of persistent ladybug populations came from Louisiana in 1988.¹ Since then, the beetle has become established through large areas of the country with reports of infestation from Wisconsin, Kentucky, Missouri, West Virginia, and along the East Coast as far south as Georgia. Hundreds to thousands of beetles can be collected each week from houses during the winter months. The problem can be severe in rural and suburban areas, but is less com-



environmental and
occupational respiratory



Cockroaches

Current reviews of allergy and clinical immunology

(Supported by a grant from Astra Pharmaceuticals, Westborough, Mass)

Series editor: Harold S. Nelson, MD

Cockroach allergens and asthma

L. Karla Arruda, MD, PhD,^{a,b} Lisa D. Vailes, MS,^c Virginia P. L. Ferriani, MD, PhD,^a
Ana Beatriz R. Santos, BSc,^b Anna Pomés, PhD,^c and Martin D. Chapman, PhD^c
Ribeirão Preto, Brazil, and Charlottesville, Va

Although cockroach allergens are found throughout the house, including beds, furniture, and carpets, the highest levels are typically found in the kitchen, and these levels are perhaps the best indicator of cockroach infestation in a house.^{8,14,19} However, exposure in the bedroom and family room may be more relevant in causing sensitization.



J Allergy Clin Immunol 2005





Allergy 2003; 58: 448-451
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Case report

Specific sensitization to the common housefly (*Musca*) not related to insect panallergy



Background: Allergy to houseflies is rare. We report a case of respiratory allergy from occupational exposure to houseflies in a farmer.

Case report: A 30 year-old female farmer with a long-standing history of grass pollen allergy observed for 2 years rhino-conjunctivitis and mild asthma when entering livestock stables and barns. Allergy retesting revealed sensitization to various pollens but not to animal danders. Houseflies (*Musca domestica*) occurring on the farm in great quantity were suspected by the farmer herself as the causative agent.

Results: Skin prick testing with housefly was positive in the patient and negative in four controls. Experimental radioallergen sorbent test was class 3 positive. Sensitization to house dust mite, storage mites and cockroach was not detectable. Western blots with housefly extracts revealed immunoglobulin E (IgE) binding to bands of 70, 50, and approximately 16 kDa. Tropomyosin in the housefly extract (35 kDa) was recognized by a tropomyosin reference serum but not by the patient. In enzyme-linked immunosorbent assay (ELISA) inhibi-

M. Focke¹, W. Hemmer¹, S. vonn¹,
M. Götz¹, R. Jarisch¹, H. Kofler³

¹Floridsdorf Allergy Centre, Vienna, Austria;



Insect: Diptera

[Eur Ann Allergy Clin Immunol](#). 2008 Jun;40(2):61-3.

The wasp-horsefly syndrome.

[Quercia O¹](#), [Emiliani F](#), [Foschi FG](#), [Stefanini GE](#).

+ Author information

Abstract

Here are two cases of two male patients of 57 and 62 years of age, already known as allergic to stinging hymenoptera venom, who after a horsefly bite have presented a serious 3-4 degree-type Mueller classification systemic reaction. The diagnosis has been carried out clinically and after an accurate environmental anamnesis and along with prick tests and RAST, further specific entomological confirm. In literature the so called wasp-mosquito-syndrome has been indicated where hyaluronidase has been referred to as the cross allergen, between the hymenoptera venom and the mosquito saliva, which likely triggers the reaction. We believe that it is also possible to take into consideration a wasp-horsefly-syndrome as well, supposing the increased risk of anaphylactic reactions to Tabanidae bites, relatively frequent in areas with animals and streams, in subjects sensitized to stinging hymenoptera. We also suggest the possibility that in these subjects some systemic reactions are due in fact to Tabanidae bites and not so much for the failure of a possible active ITS of stinging hymenoptera.

PMID: 18717054

[Indexed for MEDLINE]



Insect: Diptera



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Red mosquito larvae



Anaphylaxis caused by mosquito allergy in systemic mastocytosis

Nadine Reiter, Marielies Reiter, Sabine Altrichter, Stefanie Becker, Thomas Kristensen, Sigurd Broesby-Olsen, Martin K Church, Martin Metz, Marcus Maurer, Frank Siebenhaar



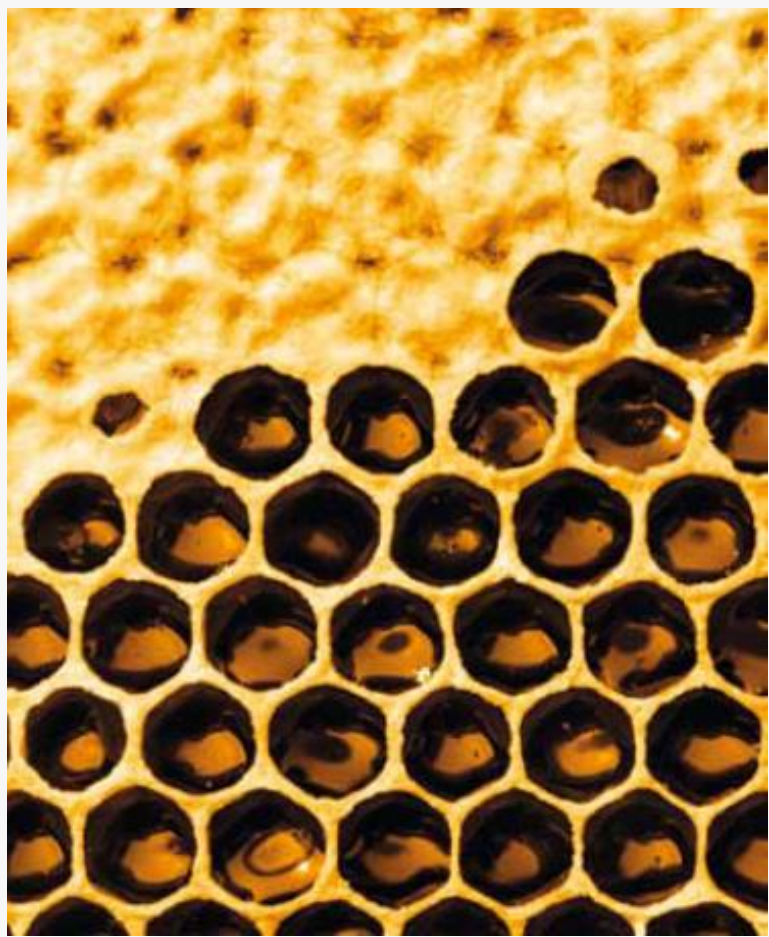
Culex pipiens

Lancet 2013; 382: 1380
Interdisciplinary Mastocytosis
Centre Charité, Department of
Dermatology and Allergy,
Charité—Universitätsmedizin
Berlin, Berlin, Germany
(N Reiter MD, M Reiter BSc,

In the summer of 1996, a 56-year-old man was bitten on his arm by a mosquito in his garden in Bavaria, Germany. About 15 min later he had diarrhoea, felt nauseous, and lost consciousness. He was bitten again by a mosquito in May, 2001, and August, 2001. Following the bite in August, 2001, the reaction developed rapidly, and he immediately lost consciousness and went into cardiac arrest before the ambulance arrived. Because of delayed resuscitation, he had hypoxic brain damage to the basal ganglia, resulting in spastic tetraplegia. Red-brown maculopapular skin lesions were seen on his upper legs and a skin biopsy showed increased mast cell numbers. In 2006, he was bitten a fourth time by a mosquito. Despite immediate administration of rescue medication consisting of epinephrine, H₁-antihistamine, and corticosteroid, he again had a severe reaction and cardiac arrest.



Insect: Hymenoptera



Honeybee

蜜蜂螫伤引起过敏性休克死亡一例报告

Chinese case reports about honeybee venom allergy

武昌铁路医院内儿科

蜜 蜂 螫 伤 引

江西省重工

患者邹××，男，38岁，于1972年4月11日午10时许，来所急诊。患者于20分钟前被蜜蜂螫额及右上眼睑，当时感头晕，周围景物旋转，及呕吐，面部、颈上和上胸部的皮肤迅速出现形态不一的风团。10分钟左右患者即昏倒在地不省，颜面苍白，四肢厥冷，大汗淋漓。患者有高血压病史，平时血压波动在140~160/90~120 mmHg。查：体温正常，脉搏不易摸到，呼吸22次/分，50/20，呈昏迷状，面色苍白，皮肤冷汗，面部胸部可见成块的风团，无鼻翼煽动及紫绀，心音远，心率51次/分，肺(-)，腹平软，肝脾未及。无病理反射。螫伤局部无红肿。

治疗经过：来所后立即皮下注射0.1%肾上腺素1mg，仍持续昏迷，约30分钟后送至我院门诊部，当时瞳孔如针尖状，心率56次/分，血压测不出，以过敏性休克进行常规抢救，吸氧、给予呼吸兴奋剂、激素等治疗，血压曾一度升至128/90毫米汞柱，心率140次/分，心音有力，律齐，双肺阴性，但仍持续昏迷，全身抽搐不见缓解，2小时后送进病房。进入

病房后，除上述症状外，继又出现瞳孔大小不等，对光反应迟钝，烦躁不安，呼吸节律不齐，并频繁呕吐，吐出物如咖啡样，心率96次/分，双肺听诊有所改变，可闻及痰鸣和干湿性啰音，腹软，肝脾不肿大，血压100/60毫米汞柱，浅反射消失，双侧巴彬斯基征阳性。血象：白细胞30000/立方毫米，中性92%，淋巴5%，单核3%，出凝血时间在正常值内，非蛋白氮39mg%，二氧化碳结合力56容积%。继续予以抗休克，控制感染、降低颅内压、激素、呼吸兴奋剂、解痉镇静、同时用南通蛇药局部涂敷，后经气管切开加压给氧等综合治疗。

患儿苗××，男性，10岁，住院号33402，既往健康，有青霉素过敏史。

患儿于1976年3月20日上午11时在户外玩耍，突然被蜜蜂螫伤右颞部，急速跑回家中，其母即在其颞部被螫伤处用手挤压，随后患儿述头痛，继之面色苍白，大汗淋漓，全身抽搐，不省人事，立即送至住地附近保健站，给予皮下注射肾上腺素1mg，仍持续昏迷，约30分钟后送至我院门诊部，当时瞳孔如针尖状，心率56次/分，血压测不出，以过敏性休克进行常规抢救，吸氧、给予呼吸兴奋剂、激素等治疗，血压曾一度升至128/90毫米汞柱，心率140次/分，心音有力，律齐，双肺阴性，但仍持续昏迷，全身抽搐不见缓解，2小时后送进病房。进入

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经上述抢救，昏迷逐渐加深，皮肤呈花纹状，四肢厥冷、发绀，出现呼吸暂停现象，经18小时15分钟抢救无效，于翌晨5时15分死亡。

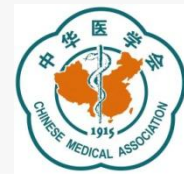
Insect: Hymenoptera



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Wasp



Insect: Hymenoptera



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DOI:10.19460/j.cnki.1.0253-3688.1976.06.034

· 44 · (总 300)

江苏医药

马蜂螫伤致严重过敏休克 1 例

吴明世

赵××，男45岁，县食品公司电工。于1990年6月10日9时20分，在修理猪圈时，被马蜂螫伤右手拇指。当时局部出现红肿灼疼，继而全身皮肤痒疹，伴有头晕，软弱，恶心呕吐，视力模糊。笔者与患者一墙之隔，随时赶到现场，患者已经出现神志不清，面色苍白，脉搏细弱。立即在9时30分抬入急救室。体查：T37.3℃，P每分36次，R每分9次，S12/82/6，双肺呼吸音清，皮肤潮红，口唇青紫，双侧眼睑高度水肿，呕吐及腹泻，喉头水肿，心率每分36次，心音低钝，律齐，肺部出现肺水肿等，进入休克状态。全身及皮肤布满了荨麻疹，高出皮肤，压之退色。血液检查：Hb120g/L，wec 11×10^9 /L，N0.75，L0.25。

抢救经过：立即吸氧，皮下注射1:1 000肾上腺素1ml，肌肉注射可拉明0.5g，山梗菜碱6mg，地塞米松5mg，扑尔敏10mg，速尿20mg，安定10mg镇静。氢化考的松100mg加入5%葡萄糖100ml静脉注入，蒸馏水20ml，加入氟美松10mg，喉头喷雾。局部处理：拔火罐吸出毒素，5%碳酸氢钠溶液冲洗，然后冷敷以止痛。20分钟后神志稍有恢复，紫绀显著缓解，呼吸略有改善，血压升高到8.0/5.3kPa，继而地塞米松20mg，维生素C5g，10%葡萄糖酸钙10ml，加入10%葡萄糖水500ml静滴。5%碳酸氢钠300ml静注。为了防止感染，庆大霉素10万U加5%葡萄糖注射液100ml静滴。2小时后神志清醒，荨麻疹全部消失，血压升高到13.3/9.3kPa，给扑尔敏8mg，氟美松0.75mg，葡萄糖酸钙片1g，胃复安10mg口服，每日4次，次日痊愈出院。

Chinese case reports about wasp venom allergy

我厂工人在实践中用人乳治疗马蜂螫伤，经我们使用13例，效果很好可迅速止痛消肿。用法：新

徐州混凝土预制加工厂

医务室 刘桂莲 1976年发表

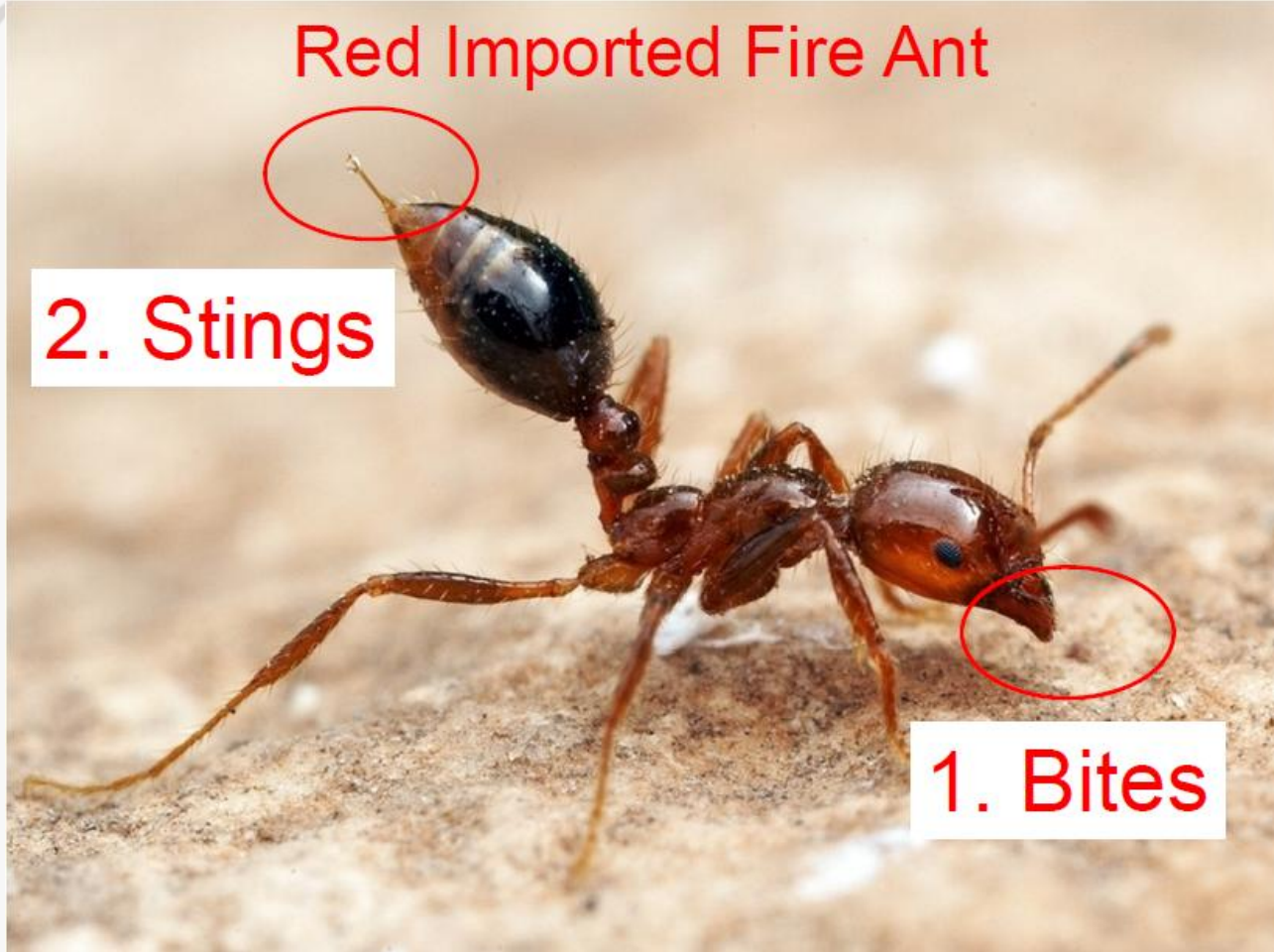


Insect: Hymenoptera



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Red Imported Fire Ant



Sol i 1 Phospholipase
cross-reacts with
Wasps

Sol i 2 specific for Solenopsis

Sol i 3

Sol i 4 specific for Solenopsis

Fire Ant



° 342 °

中国媒介生物学及控制杂志 2005 年 10 月第 16 卷第 5 期 Chin J Vector Bio & Control, October 2005, Vol. 16, No. 5

· 论著 ·

Chinese case reports about fire ants venom allergy

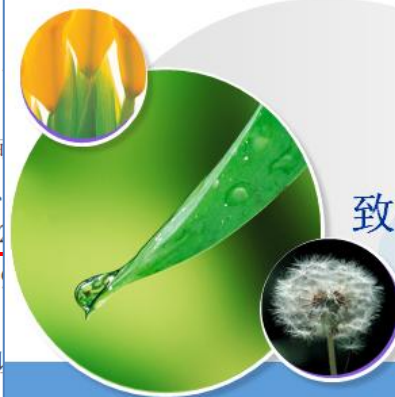
中国大陆首次发现红火蚁伤人事件调查报告

吴能简^{1,2}, 卢文成¹, 罗会明¹, 何紫电², 何剑峰¹, 梁

【摘要】 目的 了解吴川市 Z 村被红火蚁咬伤病例的患病率、三间科学依据。方法 用一览表问卷普查 Z 村村民被咬伤的流行病学特征、被叮咬过, 累计患病率 93.8% (289/308), 1999 年发现疑似红火蚁伤人, 在农田务农被叮咬者占 78.5%; 临床表现以轻微的痒痛 (100%)、红润 (见, 少见全身过敏 (0.8%) 和休克 (0.8%) 等严重症状, 咬伤部位以四肢抗过敏药治疗效果良好, 无死亡病例。结论 村民普遍被叮咬, 临床表现

【关键词】 伤害; 流行病学调查

2016 年



红火蚁叮咬
致 6 次过敏性休克一例

北京协和医院变态反应科

高翔 尹佳



Definition: Venom Allergy

- The diagnosis of allergy to Hymenoptera venom is based on the combination of **a history of reactions to stings** and **positive IgE antibody confirmatory test** either by venom skin tests or serology.
- The clinical reactions indicative of hypersensitivity are **(common/large) local reactions** and **systemic reactions**, which include urticaria/angioedema, dyspnea, vomiting and diarrhea, and fall in blood pressure with collapse, incontinence and loss of consciousness.
- Such reactions are generally induced by the IgE-mediated mechanism in response to the injection of venom allergens by the sting. **Toxic reactions caused by multiple stings (more than 50)** may also occur with similar manifestations, and require the same medical treatment.

四川夹江3头牛被3万余只蜜蜂群攻蜇死(图)

2016-03-09 09:53:06 来源: 四川新闻网(成都)

分享到:

3 cows were killed by 30,000+ bees

(原标题: 蜜蜂发疯了 夹江县3头牛被3万多只蜜蜂群攻蜇死)



村民围观被蜜蜂蜇死的牛

春暖花开, 蜂飞蝶舞。也许, 你万万想不到, 一向看起来十分温驯的小小采花蜂, 也可能带来致命伤害。3月6日, 在乐山市夹江县城郊, 3头牛被3万多只蜜蜂群攻后活活蜇死, 放牛人和养蜂人都损失惨重。目前, 死牛已被深埋处理, 双方正协商赔偿问题。

对此, 医生及专业养蜂人提醒, 外出赏花时尽量不要穿鲜艳的外衣, 也不要刻意去招惹蜜蜂, 女士外出赏花最好莫喷香水。

事发: 3头牛被群蜂攻击致死

3月8日上午, 66岁的罗开全刚刚从夹江县中医院出院。回忆起两天前的一幕, 罗开全仍忍不住瑟瑟发抖, “我养了20年牛了, 从没遇到过这种情况, 3头牛竟然被蜜蜂活活蜇死了, 我也被蜜蜂蜇伤了。”

Prevalence of Venom Allergy



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- European data shares prevalence of **large localized** and **systemic reactions** to Hymenoptera stings in the general population as **20%** and **1-5%**, respectively.
- Systemic reaction incidence to Hymenoptera stings in beekeepers is as high as 14-43%, sourcing honeybee venom allergy as dominant.
- In Europe, over 100 people die from hymenoptera venom induced anaphylaxis annually.

Przybilla B, Ruëff F. J Dtsch Dermatol Ges, 2010, 8: 114-127.
Biló BM, Rueff F, Mosbech H, et al. Allergy, 2005, 60: 1339-1349.
Finegold I. Curr Opin Allergy Clin Immunol, 2008, 8: 343-347.
Müller UR. Inflamm Allergy Drug Targets. 2011 Oct;10(5):420-8.





Clinical Features of 44 Cases of Honey Bee Venom Allergy

GUAN Kai, KONG Rui, YIN Jia[#]

(Department of Allergy, Peking Union Medical College Hospital, Chinese Academy of Medical Sciences & Peking Union Medical College, Beijing 100730, China)

Objective To investigate the clinical characteristics of honey bee venom allergy. **Methods** Clinical data were collected and summarized from patients who were diagnosed as honeybee venom allergy or other allergic diseases without relevant clinical history of honeybee venom sting reaction but whose honeybee venom (il) sIgE results were positive from Department of Allergy, PUMC hospital since June 2002 to February 2012. Based on honeybee sting reactions, patients were divided into three groups: local reactions, large local reactions and systemic reactions. Habitual residence and exposure types of the patients were analyzed. The sIgE/T-IgE was compared between allergy and control group. **Results** 44 patients were enrolled into allergy group, male versus female was 31:13; average age was 37 (between 29 and 48 years old). 48% (21/44) of them lived in urban areas and 52% (23/44) lived in the rural areas. 30/44 of the cases were suffering from local reactions, 6/44 of the cases from large local reactions and 8/44 of the cases from systemic reactions. 1/8 of the case was graded as type II and 7/8 of the cases as type III in systemic

reaction only during first sting and attacked by type II systemic reaction when he was stung again three months later. **Conclusions** Occupational exposure was the most common cause of honeybee venom systemic reaction. sIgE/T-IgE could be a helpful tool for the diagnosis of honeybee venom allergy.

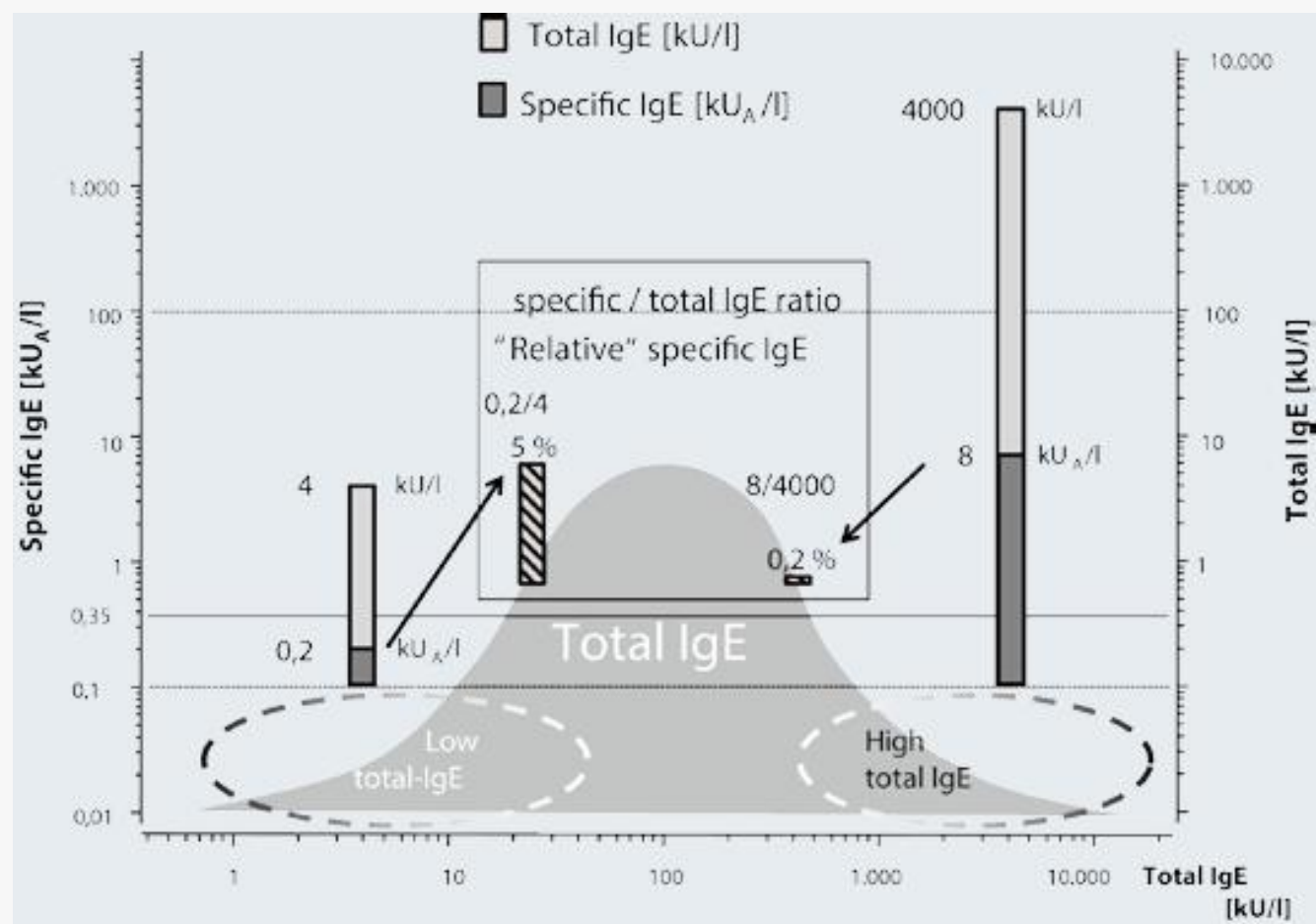
Key words: honeybee venom; allergy; large local reaction; systemic reaction

months later. **Conclusions** Occupational exposure was the most common cause of honeybee venom systemic reaction. sIgE/T-IgE could be a helpful tool for the diagnosis of honeybee venom allergy.

Key words: honeybee venom; allergy; large local reaction; systemic reaction



Specific IgE/ Total IgE Ratio



Original Article

Use of sIgE/T-IgE in Predicting Systemic Reactions: Retrospective Analysis of 54 Honeybee Venom Allergy Cases in North China

Kai Guan, Li-Sha Li, Jia Yin

Department of Allergy, Peking Union Medical College Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing 100730, China

Abstract

Background: Venom allergy is significantly underestimated in China. Venom-specific IgE may not provide accurate clinical reactions. Our conducted retrospective analysis observes alternative diagnostic considerations in assessing confirmation and severity of honeybee venom allergy.

Methods: Retrospective review of honeybee venom allergy versus nonallergy patients presented with positive honeybee venom (i1) sIgE results. According to clinically observed reactions caused by a honeybee sting, patients were divided into three groups. Patient residence and exposure types were analyzed. The sIgE/T-IgE among allergy and control groups was compared.

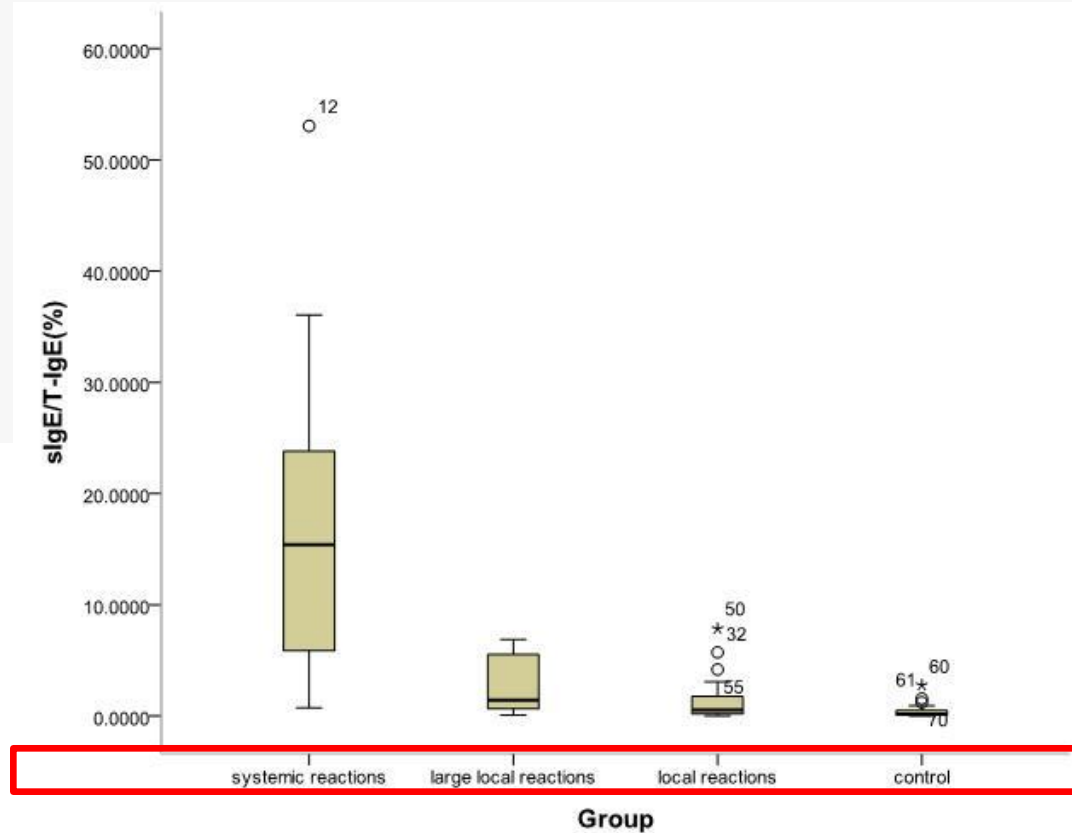
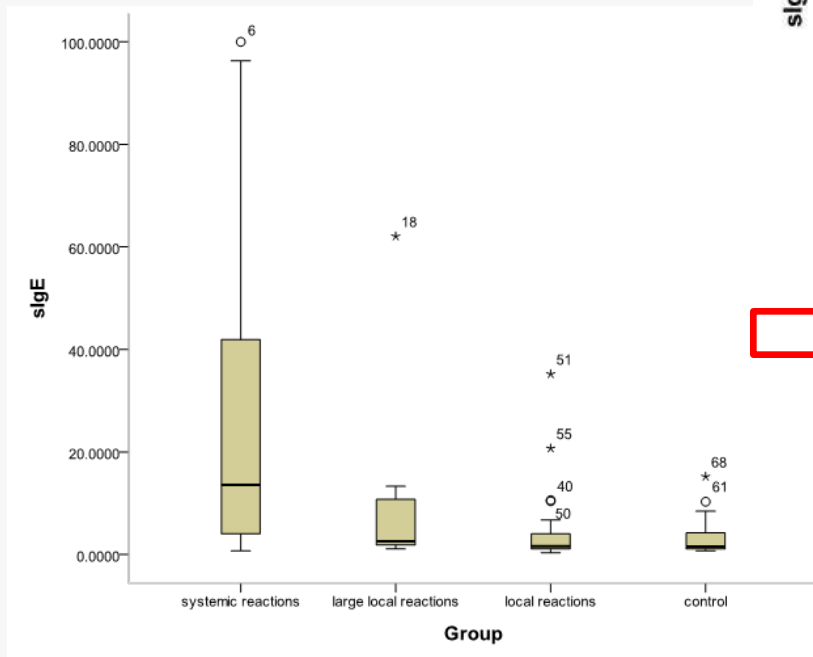
Results: Gender ratio male:female was 32:22; median age was 39 years (31, 50). 48% (26/54) of patients live in urban areas, 52% (28/54) in rural areas. Based on bee sting reactions, patients were divided into common localized reactions (32/54), large localized reactions (7/54), and systemic reactions (15/54). In the systemic reaction group, patients presented as Type II (6/15), Type III (6/15). There is significant difference ($P < 0.001$) between the three groups in regards to exposure types. In the systemic reaction group, 8.7% (13/15) of patients are

Six systemic reaction patients presented with large localized reactions before onset of system symptoms 1 month to 1 year of being stung.

Conclusions: Occupational exposure is the most common cause in honeybee venom allergy induced systemic reactions. The use of sIgE/T-IgE results is a useful diagnostic parameter in determining honeybee venom allergy.

Key words: Honeybee Venom Allergy; Localized Reaction; Systemic Reaction

slgE and sIgE/T-IgE in allergy/non-allergy



Clinical Characteristics of Anaphylaxis Induced by Honeybee Venom

GUAN Kai, LI Li-sha, WANG Rui-qi, YIN Jia[#]

(Department of Allergy, Peking Union Medical College Hospital, Chinese Academy of Medical Sciences & Peking Union Medical College, Beijing 100730, China)

Objective To investigate the clinical characteristics of honeybee venom induced anaphylaxis. **Methods** Cases of anaphylaxis induced by honeybee sting were collected and analyzed retrospectively since 2011 to 2016 in Peking Union Medical College Hospital. The severity was classified into Grades I to IV based on the systemic manifestations after honeybee sting. Patients' residence and exposure types were also analyzed. The role of venom allergenic components sIgE tests was evaluated preliminarily in distinguishing dual allergic reactions from cross-reactivity. **Results** Gender ratio among 30 cases was: 12 (male) : 18 (female) and average age was 35 years-old (27, 38). 70.0% (21/30) of the patients lived in BTH (Beijing-Tianjin-Hebei) region; 23.3% (7/30) in urban areas whereas 76.7% (23/30) in rural areas. The distribution of severity of systemic reactions was Grade I (6/30), Grade II (8/30), Grade III (12/30) and Grade IV (4/30) respectively. There were three kinds of exposure types as following: natural (2/30), occupational (26/30) and iatrogenic (2/30). 86.7% of the patients were beekeepers. The average odd il (honeybee venom) sIgE detection results was 12.80 (2.80,

be induced by second sting within 3 - 12 months. **Conclusions** Occupational exposure was the most common cause of honeybee venom anaphylaxis. Allergenic components sIgE can be a useful diagnostic tool in the determination of dual venom allergic reactions.

Key words: bee venoms; anaphylaxis; allergens

be induced by second sting within 3 - 12 months. **Conclusions** Occupational exposure was the most common cause of honeybee venom anaphylaxis. Allergenic components sIgE can be a useful diagnostic tool in the determination of dual venom allergic reactions.

Key words: bee venoms; anaphylaxis; allergens

GUAN Kai, LI Li-sha, WANG Rui-qi, YIN Jia. Chin J Allergy Clin Immunol, 2016, 10(3):197-201



Allergens in Honey Bee Venom (*Apis mellifera*)



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Allergen	Molecular Weight	Glycosylation	Major/Minor Allergen*	Recombinant Form Published	References
Phospholipase A2 Api m1	16 kd	yes	major	yes	Dudler [15]
Hyaluronidase Api m2	43 kd	yes	major	yes	Soldatova, Markovic-Housley [17,18]
Acid phosphatase Api m3	45 kd	yes	minor	yes	Grunwald [19]
Melittin Api m4	2.8 kd	no	minor	yes	King [27]
Dipeptidylpeptidase Api m5	102 kd	yes	?	ND	de Graaf [20], Blank [21]
Api m6	8 kd	no	minor	yes	Kettner [22]
CUB serine protease Api m7	39 kd	yes	?	yes	Winningham [23]
Carboxylesterase Api m8	70 kd	?	minor	ND	de Graaf [20]
Icarapin	29 kd	?	?	yes	Peiren [24]



Allergens in Wasp Venom (*Vespula sp.*)

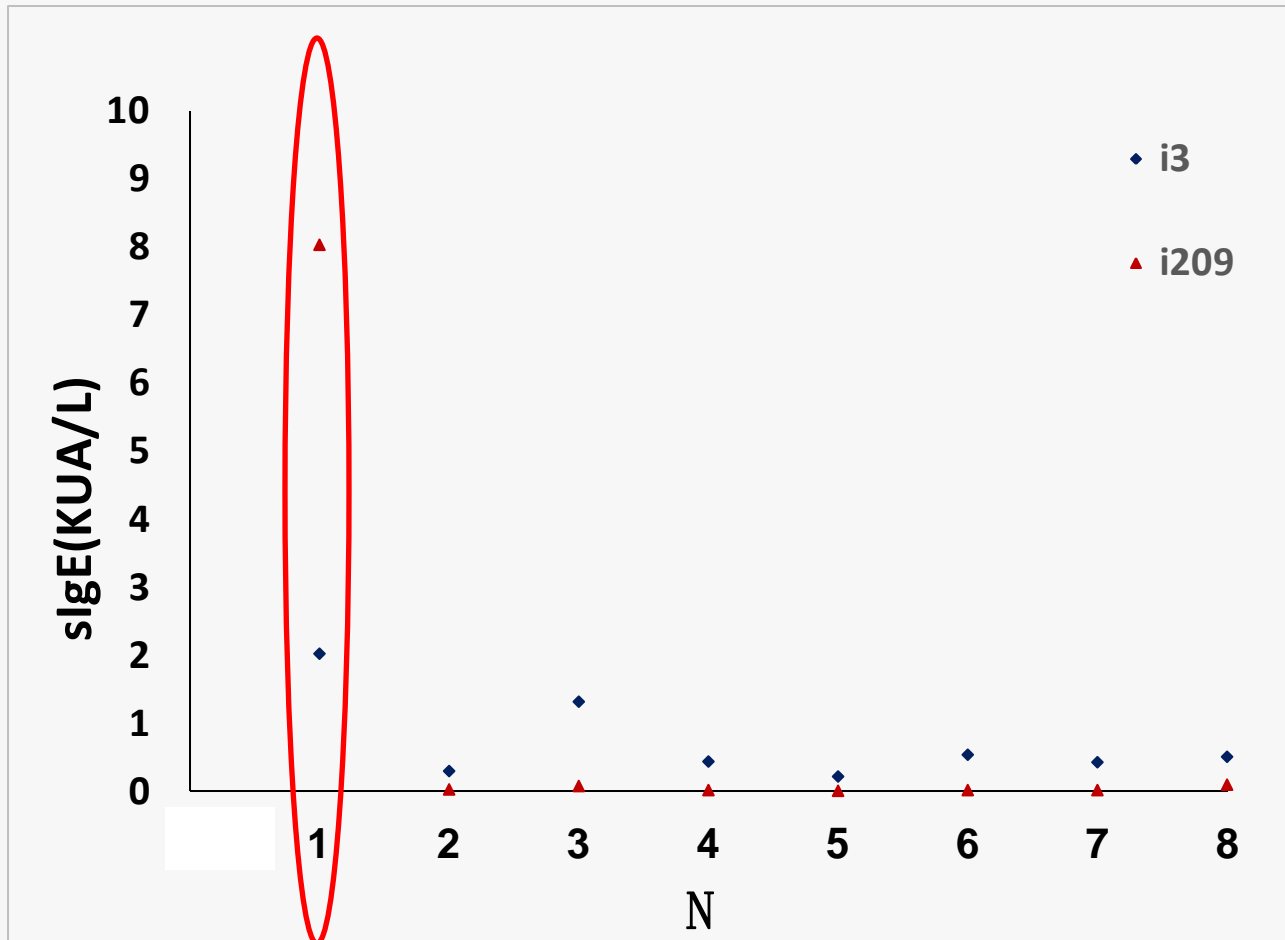


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Allergen	Molecular Weight	Glycosylation	Major/Minor Allergen	Recombinant form Published	References
Phospholipase A1 Ves v1	34 kd	no	major	Yes	King [27]
Hyaluronidase Ves v2	38 kd	yes	minor	yes	King [27]
Dipeptidylpeptidase Ves v3	100 kd	yes	?	yes	de Graaf [20] Blank [21]
Antigen 5 Ves v5	23 kd	no	major	yes	Skov [28]



Major allergen sIgE test

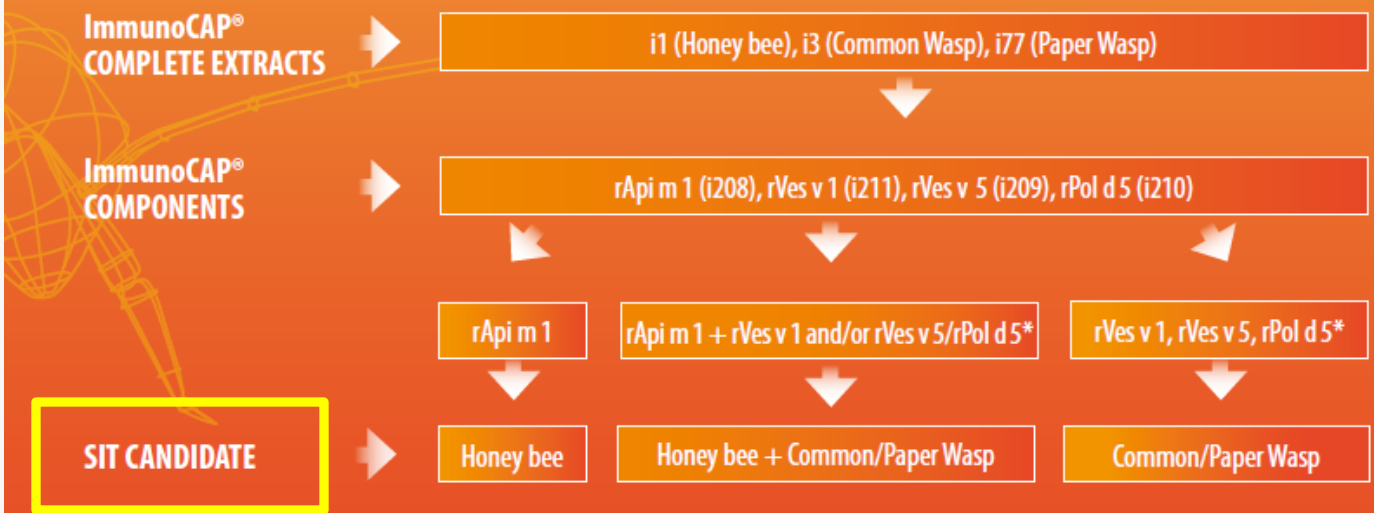


42%(8/19) patients had positive results to both i1 and i3. In whom, there are 7 patients' i209<0.10KU/L and just one patient's i209=8.03 KU/L.



Major allergen sIgE test

Both complete extracts and recombinant components are needed for a precise patient assessment



From LLR to SR

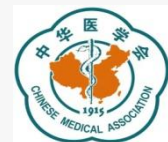
- 33%(10/30) patients developed systemic reactions three to twelve months later when re-stung.
- Whether patients with large localized reactions need venom immunotherapy are controversial, but Severino et al pointed 5-10% patients with a history of large localized sting reaction develop systemic symptoms when re-stung.
- Based on the Task force report on Allergen immunotherapy from AAAAI/ACAAI in 2011, patients who experience recurrent bothersome LLRs became a new indication for AIT.

Exposure types of honeybee venom Anaphylaxis



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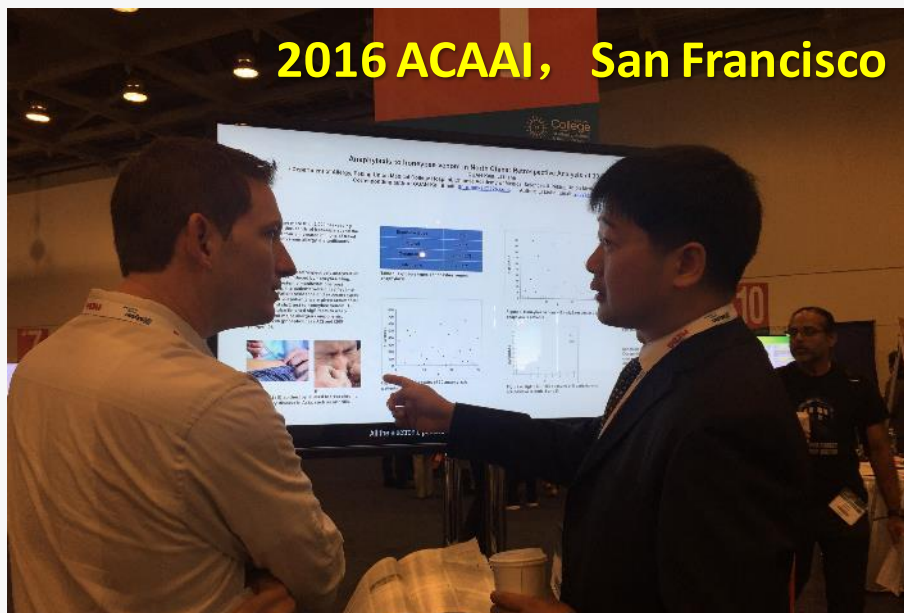
组别 (group)	n (%)
自然性暴露 (natural)	2 (6.7)
职业性暴露 (occupational)	26 (86.7)
医源性暴露 (iatrogenic)	2 (6.7)



Question from Communication



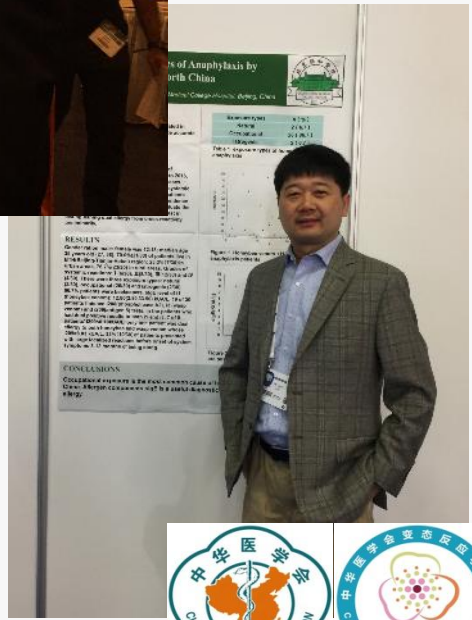
2015 KAAACI-EAAS, Seoul



2016 ACAAI, San Francisco



2018 ESK, Seoul



2017 EAACI, Helsinki



Question from Communication

Practitioner's Corner		45
<hr/>		
Death due to Live Bee Acupuncture Apitherapy	Table. In Vitro Test Results ^a	
<hr/>		
Total IgE	20 KU/L	
Apis mellifera sIgE	5.99 KU _A /L	

Vazquez-Revuelta P, Madrigal-Burgaleta R
*Allergy Division, Ramon y Cajal
Spain*

J Investig Allergol Clin Immunol 2018
doi: 10.18176/jiaci.0202

Key words: Apitherapy. Anaphylaxis
Palabras clave: Apiterapia. Anafilaxia

Apitherapy is the use of substances from bees (eg, honey, propolis, royal jelly) for various medical conditions. One of these is bee acupuncture, which involves applying live bees directly to the relevant site of disease. This practice is often performed in health care centers or by nonmedical personnel.

We report the case of a 55-year-old woman who had been attending apitherapy sessions every 4 weeks for 2 years with good tolerance. She decided to receive apitherapy to improve muscular contractures and stress. She had no clinical record of any other diseases (eg, asthma, heart disease), other risk factors, previous reactions of any kind with hymenoptera, or atopy. During an apitherapy session, she developed wheezing, dyspnea, and sudden loss of consciousness immediately after a live bee sting. An ambulance was called, although it took 30 minutes to arrive. The apitherapy clinic personnel administered methylprednisolone. No adrenaline was available. When the ambulance arrived, the patient's systolic pressure had dropped to 42 mmHg and her heart rate had increased to 110



The Journal of Investigational Allergology and Clinical Immunology (Allergol Clin Immunol) provides an attractive forum for research in allergology and clinical immunology, reviews, short communications and opinions. The Journal is published by the Society of Allergy and Clinical Immunology (SACI), (6 issues each year). The peer-review system and committed editors, guarantees the scientific quality of the journal.

Current ISSUE
2018; volume 28, Issue 1
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Looking for the answer-Part 1



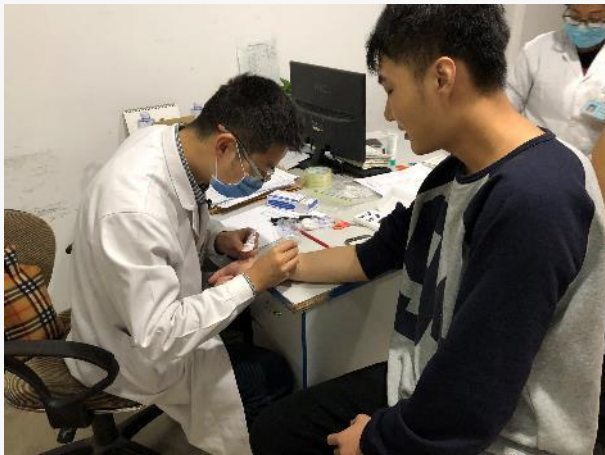
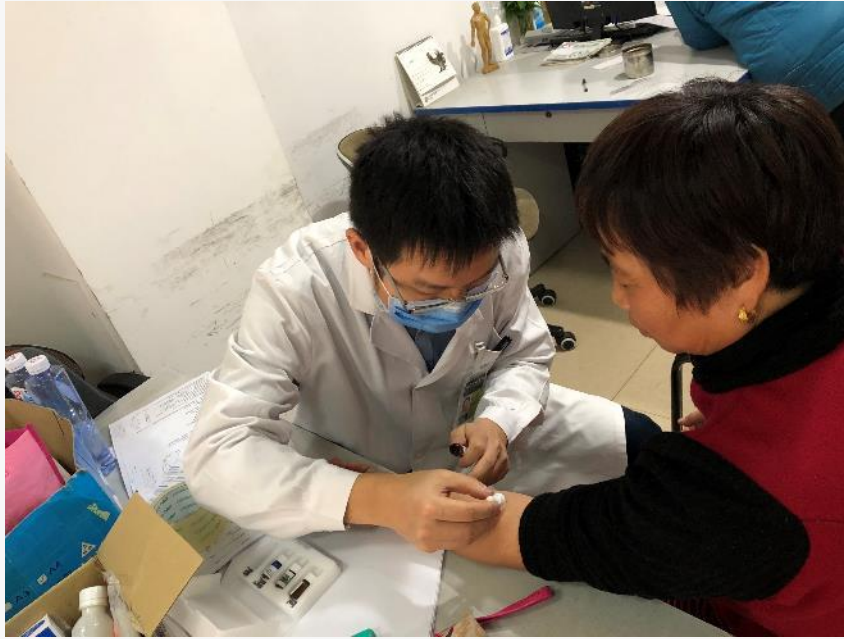
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Looking for the answer-Part 1



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Looking for the answer-Part 1

	North China (n=79)	South China (n=48)	P值
蜂疗的起始年龄, 均数 (标准差) Age Starting	53.2 (15.2)	41.2 (16.9)	<0.001
女性, 人数 (%)	56 (70.9%)	32 (66.7%)	0.693
汉族, 人数 (%)	78 (98.7%)	43 (89.6%)	0.029
蜂疗的基础疾病, 人数 (%)			
类风湿关节炎	39 (49.4%)	15 (31.3%)	<0.001
骨关节炎	13 (16.5%)	4 (8.3%)	
腰椎间盘突出症	13 (16.5%)	2 (4.2%)	
强制性脊柱炎	3 (3.8%)	10 (20.8%)	
颈椎病	3 (3.8%)	4 (8.3%)	
周围神经病	1 (1.3%)	3 (6.3%)	
肿瘤 Tumor	0	3 (6.3%)	
痛风 Gout	0	2 (4.2%)	
脑血管病	2 (2.5%)	0	
健康人 Health	5 (6.3%)	5 (10.4%)	
蜂疗频率, 人数 (%)			
少于每周一次	4 (5.1%)	15 (31.3%)	<0.001
每周1-3次	8 (10.1%)	31 (64.6%)	
每周4-7次	67 (84.8%)	2 (4.2%)	

Looking for the answer-Part 1

North China South China

过敏类型	石家庄 (n=77)	广州深圳 (n=47)	合计 (n=124)
LLR 大局部反应	10 (13.0%)	12 (25.5%)	22 (17.7%)
SR 全身反应	6 (7.8%)	8 (17.1%)	14 (11.3%)

29%

Allergy Non-allergy

	过敏组 (n=36)	非过敏组 (n=88)	OR值 (95%可信区间)
蜂疗的起始年龄, 均数 (标准差)	41.5 (17.7)	52.1 (15.6)	0.978 (0.948-1.008)
女性, 人数 (%)	26 (72.2%)	59 (67.0%)	0.748 (0.281-1.988)
汉族, 人数 (%)	35 (97.2%)	83 (94.3%)	3.423 (0.324-36.165)
蜂疗的基础疾病, 人数 (%)			
非结缔组织病相关性关节炎	7 (19.4%)	34 (38.6%)	
结缔组织病相关性关节炎	21 (58.3%)	46 (52.3%)	2.248 (0.782-6.465) ☹️
其他疾病	8 (22.2%)	8 (9.1%)	2.427 (0.553-10.655) ☹️
蜂疗频率, 人数 (%)			
少于每周一次	13 (36.1%)	6 (6.8%)	
每周1-3次	11 (30.6%)	26 (29.5%)	0.838 (0.708-0.991) 😊
每周4-7次	12 (33.3%)	56 (63.6%)	
生活在郊区, 人数 (%)	13 (36.1%)	12 (13.6%)	1.701 (0.575-5.028)
过敏史, 人数 (%)	13 (36.1%)	25 (28.4%)	1.264 (0.494-3.236)

Including Health
CTD
健康人亚组蜂毒过敏患病率最高 (6/8, 75%)



蜂毒过敏的临床特点

—首次出现过敏症状的蜂疗次数

在14例全身反应者中，4例首先表现为大局部反应，随后出现 II -IV级全身反应，1例先后出现大局部反应、I级反应、II -IV级反应。首次出现大局部反应、全身反应的蜂疗次数（中位数）逐渐增加，并且有显著性差异（ $P=0.010$ ）

	LLR	SR	
	大局部反应 (n=27) *	I级 (n=7) #	II -IV级 (n=8)
首次出现过敏反应的蜂疗次数，中位数（四分位数）	3(1-5)	4 (3-10)	7.5 (3.25-17.5)

First onset time

蜂毒过敏的临床特点

—过敏耐受情况

	LLR	SR	
	大局部反应 (n=22)	I级 (n=6)	II -IV级 (n=8)
后期可耐受人数 (%)	16 (72.7%)	5 (83.3%)	2 (25.0%)

Tolerance

Looking for the answer-Part 1



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Clinical manifestations and risk factors of honeybee venom allergy induced by apitherapy

CUI Le, WANG Zi-xi, GUAN Kai, Bobby Quentin Lanier, LI Li-sha, XU Ying-yang, YIN Jia, XU Tao
Department of Allergy, Peking Union Medical College Hospital, Chinese Academy of Medical Sciences & Peking Union Medical College; Beijing Key Laboratory of Precision Medicine for Diagnosis and Treatment of Allergic Diseases, Clinical Immunology Center, Chinese Academy of Medical Sciences, Beijing 100730, China (CUI L, WANG ZX, GUAN K, LI LS, XU YY, YIN J); North Texas Institute for Clinical Trials, Fort Worth, Texas 76109, USA (Lanier BQ); Department of Epidemiology and Biostatistics, Institute of Basic Medical Sciences, Chinese Academy of Medical Sciences & School of Basic Medicine, Peking Union Medical College, Beijing 100005, China (XU T)

Corresponding author: GUAN Kai, E-mail: dr_guankai@126.com

【Abstract】 Objective To investigate the incidence and clinical findings of honeybee venom allergy (HVA) in the population who received apitherapy and analyze its risk factors. **Methods** A multicenter cross-sectional study in the patients with apitherapy was performed in Shijiazhuang Dazheng Apitherapy Hospital (in North China), First Affiliated Hospital of Guangzhou University of Traditional Chinese Medicine and Shenzhen Traditional Chinese Medicine Hospital (in South China) during December 2017 and January 2018. Clinical data and manifestations induced by apitherapy were collected and analyzed. The diagnosis of HVA was confirmed based on positive results of skin prick test (SPT) to honeybee venom. **Results** One hundred and twenty-four patients were enrolled in the analysis. Women accounted for 68.5%; the average age was (50.8±16.6) years old. Allergic reaction occurred after apitherapy and SPT was carried out in 41 patients. The diagnosis of HVA was confirmed in 29% (36/124) patients with adverse reactions after apitherapy basing on positive SPT results. The prevalence of large local and systemic

Conclusions HVA is common during apitherapy and should not be ignored. For the patients with high risk factors, close observation after apitherapy and an emergency kit contained epinephrine are necessary. Regular apitherapy may decrease the risk of HVA.

lar apitherapy may decrease the risk of HVA.

【Key words】 Honeybee venom; Hypersensitivity; Prevalence; Cross-sectional study

Fund program: Beijing Natural Science Foundation Project (7172179); Public Welfare Industry Scientific Research Fund (201502012); Youth Teacher Training Program of Peking Union Medical College (2015zlgc0726)



Looking for the answer-Part 2



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Prevalence and severity of HVA in bee keepers

	N(n=100)	Percent (%)
Large local reaction	6	6%
Systemic reaction	28	28%
Grade I	7	7%
Grade II	7	7%
Grade III	4	4%
Grade IV	10	10%
Total	34	34%





Logistic regression of risk factors of HVA

	P	OR (95% CI)
Female	0.855	0.900 (0.290-2.791)
Length of service	0.068	3.218 (0.917-11.287)
The frequency of bee stings		
0 times		
1-3 times	0.002	↑ 6.362 (2.014-20.092)
≥4 times	<0.001	↑↑ 41.437 (6.842-250.964)
Family history of HAR	0.466	2.582 (0.201-33.099)
Allergic history such as allergic rhinitis	0.547	0.683 (0.197-2.366)
Family history such as allergic rhinitis	0.511	0.600 (0.131-2.749)



Patient education need to be strengthened

High-risk populations	LLR (n=6)	Systemic reaction (n=28)
VIT can be used in HVA	0 (0.0%)	17 (60.7%)
Adrenaline must be used in anaphylaxis	3 (50.0%)	16 (57.1%)



Looking for the answer-Part 2



Analysis of prevalence and related risk factors of bee venom in bee research population

CUI Le^{1,2}, GUAN Kai^{1,2}, LI Lisha^{1,2}, LI Junda^{1,2}, WANG Zixi^{1,2}, XU Yingyang^{1,2}, WANG Lianglu^{1,2}, YIN Jia^{1,2}

1. Department of Allergy, Peking Union Medical College Hospital, Chinese Academy of Medical Sciences & Peking Union Medical College, Beijing 100730, China; 2. Beijing Key Laboratory of Precision Medicine for Diagnosis and Treatment on Allergic Diseases, Beijing 100730, China

Abstract: Objective Allergic reactions to bee venom are one of the common causes of severe allergic reactions. There are few studies on bee venom allergy in China; particularly, there is a lack of data on people at high risk of bee venom allergy. This study investigated the prevalence and clinical characteristics of bee venom allergies in the bee study population and analyzed the risk factors. **Methods** In September 2018, a cross-sectional survey was conducted among people who had been engaged in bee-related research at the Bee Research Institute of the Chinese Academy of Agricultural Sciences and the Department of Entomology of China Agricultural University. **Results** A total of 100 people were included in the study: median age 28 years (range: 19-56 years); females accounted for 69.0%. Among them, 34 cases (34.0%) reported having had allergic reactions to bee venom at work, 6 cases (6%) had large local reactions, and 28 cases (28%) had systemic reaction reactions. Among the 28 systemic reaction responders, there were 7, 7, 4, and 10 cases of systemic reactions in grades 1-4, respectively. The systemic reaction of grade 4 was the commonest (35.7%). Fifty percent of systemic reaction responders experienced large local reactions after initial bee sting. Logistic regression showed that the level of exposure, that is, the frequency of bee stings was a risk factor for bee venom allergy. Compared with the respondents who were not been stung in the past year, the *OR* (95% *CI*) of bee venom allergy of 1-3 and ≥ 4 bee stings in the past year were 6.362 [95% confidence interval (*CI*), 2.014-20.092] and 41.437 (95% *CI*, 6.842-250.964). There was no statistically significant association between allergic reaction to bee venom and other allergic diseases (asthma, allergic rhinitis, allergic conjunctivitis, family history of hay fever) (95% *CI*, 0.201-33.099), respectively). **Conclusion** The situation of bee venom allergy in high-risk population cannot be ignored. For high-risk groups, it is necessary to pay close attention to protection and provide emergency medicine and equipment.

Key words: Bee venom; Allergic reaction; Prevalence; Cross-sectional survey; Risk factors



Food products from bee



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Hives



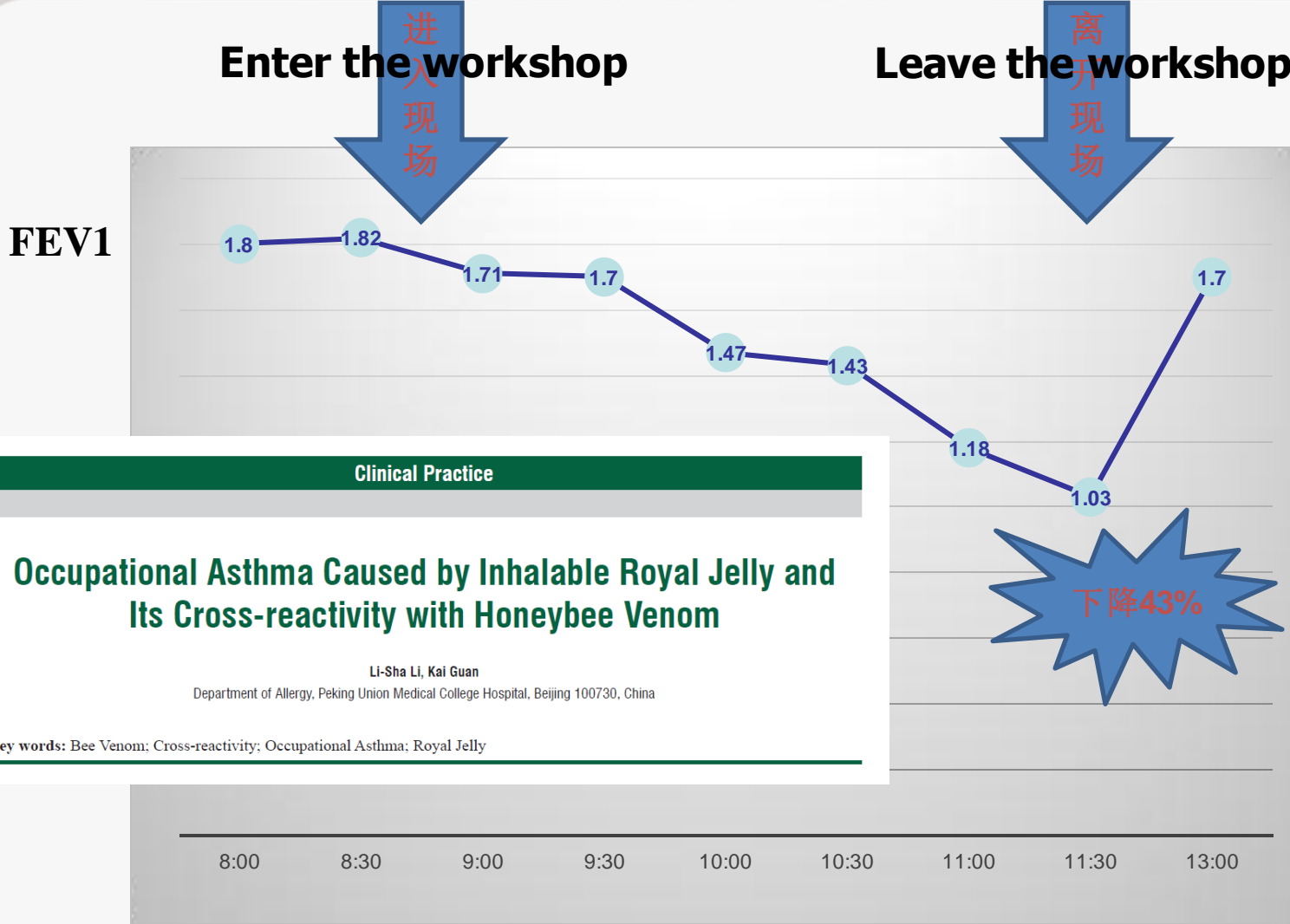
Honey



Royal Jelly



Royal Jelly Allergy



Clinical Practice

Occupational Asthma Caused by Inhalable Royal Jelly and Its Cross-reactivity with Honeybee Venom

Li-Sha Li, Kai Guan
Department of Allergy, Peking Union Medical College Hospital, Beijing 100730, China

Key words: Bee Venom; Cross-reactivity; Occupational Asthma; Royal Jelly



Royal Jelly Allergy

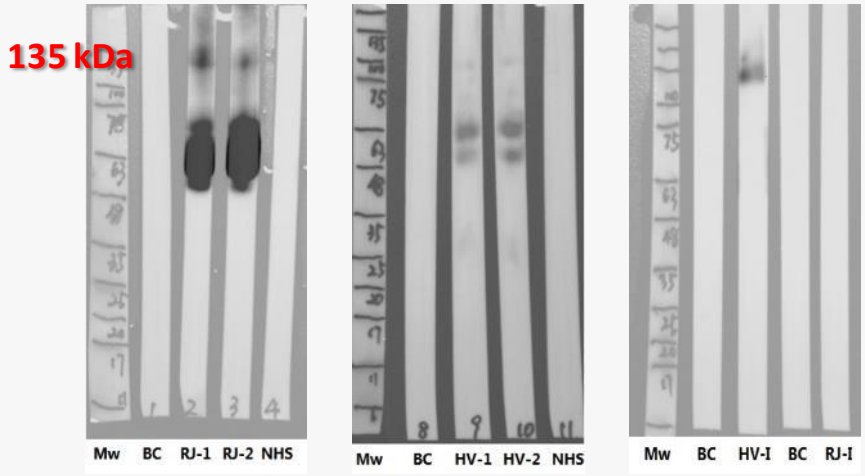
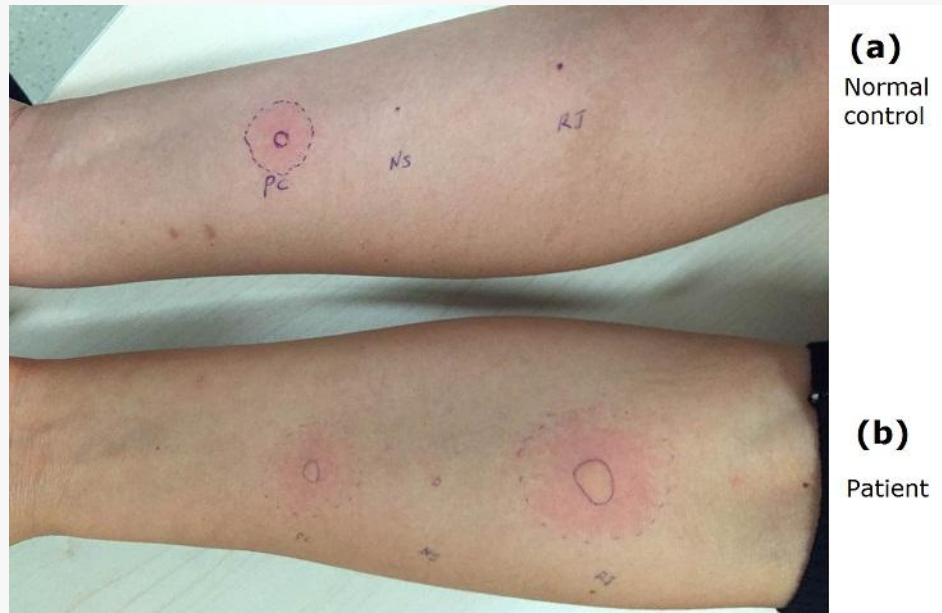


Figure 1. Skin prick tests (SPT) with royal jelly extract. (a) SPT results of normal people without allergic disorders; (b) SPT results of this patient. Pc: positive control with histamine; Ns: negative control with normal saline; RJ: royal jelly extract.

RJ: salivary gland
HV: genital gland



Summary

- **Using sIgE/T-IgE may help to identify the severity of honeybee venom allergy.**
- **Major allergen sIgE test can contribute to distinguish dual sensitivity from cross-reactive sensitivity.**
- **Occupational exposure is the most common cause of honeybee venom systemic reaction. Apitherapy with living bees should be cautious as well.**
- **Venom allergy patients should be aware of cross reaction to other bee product.**



New Review is coming



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Stinging Insect Allergens

1

2

3 CUI Le¹, XU Ying-Yang¹, WANG Xiu-Jie² and GUAN Kai¹.

4 1. Department of Allergy, Peking Union Medical College Hospital, Chinese Academy
5 of Medical Sciences & Peking Union Medical College; Beijing Key Laboratory of
6 Precision Medicine for Diagnosis and Treatment of Allergic Diseases; Clinical
7 Immunology Center, Chinese Academy of Medical Sciences, Beijing 100730, China.

8 2. Institute of Genetics and Developmental Biology, Chinese Academy of Sciences,
9 Beijing, 100101, China.

10

11 *Corresponding Author:

12 Kai Guan, MD, Peking Union Medical College Hospital, Chinese Academy of

13 Medical Sciences & Peking Union Medical College, Beijing, 100730, China; Fax:

14 0086-010-69156346; Telephone: 0086-010-69156346; E-mail: dr_guankai@126.com.

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Allergy Dept. of PUMCH



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Thanks

