Novel notion for the innate and adaptive immune system and food allergy: what's breaking news?

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This is an important issue of the journal because two very interesting review articles are published this month, the first being on host immunity. The immune system is a biological process which has developed to protect organisms from invaders. Generally, the defense mechanisms can be categorized into two subsystems namely, the innate and adaptive systems. To our knowledge, innate systems are primitive immune functions which are found in all living organisms, including prokaryotes, whereas the adaptive immune responses are well acknowledged as acquired immunities establish only in vertebrates. Hence, both protective mechanisms are distinctly different. Recently, a special type of adaptive system operating like RNAi of vertebrates has also been detected in bacteria and archaea.[1] With these new findings, the classical concept of the immune system should be revised. Thus, a new perception of the evolution of the host defence mechanism has been selected for review and will provide up to date molecular and genomic information gathered from evolutionary data of the innate and adaptive immune receptors of invertebrate and vertebrate animals.

Secondly, Elizabeth H Tham has written a comprehensive review of practical approaches for prevention of food allergy and has summarized the current evidence for the future of food allergy management.[2] Primary prevention is very valuable and should be focused on more than secondary intervention. Exclusively breastfeeding with early introduction of complementary solid foods or feeding with hydrolyzed formulas, as well as a healthy balanced diet, are recommended for high risk infants. Interestingly, maternal dietary restrictions during pregnancy and lactation may not be beneficial, as previously understood.

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With regards to the topic of asthma, five articles examining various aspects of the subject are included in this edition. A study of ozone-exposed conditioned T cells revealed that asthmatic children who are exposed to ozone might have initiation of the activation of Th1 cells rather than of Th2.[3] Jiang et al. demonstrated that hyperactivation of CD4+ T cells and defective activation-induced cell death (AICD) could be the cause of the development and maintenance of chronic inflammation in childhood asthma.[4] Moreover, it could manipulate the elevation of IL-4, $FLIP_L$ and Bcl-2 expression and decrease Fas expression, jointly participating in these changes in cell proliferation and apoptosis. A study from Australia has shown that neutrophilic asthma may be associated with an increased frequency of asthma exacerbations and chest infections as well as the enhanced occurrence of rhinosinusitis, as compared with paucigranulocytic and eosinophilic asthma. This finding could be applied to the control and management of neutrophilic asthma.[5] Li et al. have demonstrated the unexpected relationship of serum uric acid and the severity of asthma, which means that serum uric acid levels may be used as a biomarker for the onset of asthma exacerbation.[6] Furthermore, researchers from National University of Singapore have demonstrated that the cord blood T-cell cytokine responses is associated with the development of early onset of childhood wheeze but has no relationship with eczema.[7]

Besides, those papers on airway allergy, two other interesting papers involved with contact allergy[8] and mosquito allergy[9] are included. Mahakittikun et al. found that natural products, like clove oil (*Eugenia caryophyllus*), are effective acaricides with potential use in dust-mite laden mattresses.[10] A novel allergen from *Caryota mitis* pollen, which is characterized as a pan-allergen profiling, has been reported from China.[11] With the updated information and diversity of interesting articles in the field of allergy and immunology, we anticipate that you find this issue will encourage

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you to expand your research work as well as being applicable to your clinical practice.

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