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Current status in diagnosis of atopic dermatitis in China

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In China, eczema and atopic dermatitis (AD) have been traditionally considered as 2 distinct entities. Eczema typically referred to the milder phenotypes or to phenotypes with atypical morphology and distribution of lesions and many dermatologists have ever recognized that the “eczema” diagnosed clinically by them is actually milder phenotypes or phenotypes with atypical morphology and distribution of lesions of AD. Moreover, AD, contact dermatitis, diaper dermatitis, perioral dermatitis, halo dermatitis, pompholyx, seborrheic dermatitis, etc. are not included in category of “eczema” in Chinese textbook of dermatology².

A diagnosis of AD is used by most of dermatologists only when the clinical manifestations are significantly typical, such as “symmetrical and flexural dermatitis”. A substantial part of Chinese dermatologists argue that the diagnosis of AD must be restricted to those phenotypes who stringently fulfill the Hanifin & Rajka or U.K. Working Party’s Criteria. In particular, a positive family history of atopy is considered as a crucial criterium for the diagnosis of AD. In situations of unclear information on that specific item, the cases are considered as another disease and classified as eczema and not as AD. Thus, the proportion of phenotypes diagnosed as eczema is much higher than that

classified as AD (estimated 70% vs 30%, unpublished data), ultimately leading to a lower figure of the prevalence of AD in China. A study in 2002 conducted by distributing 49,241 questionnaires to 10 provincial capitals, showed that the prevalence of AD in children aged 1-7ys was 3.07% using U.K. diagnostic criteria¹.

In traditional Chinese medicine, various names had been used to describe the phenotype of eczema or atopic dermatitis such as “infra-auricular and retroauricular rash” and “scrotum wind”, equivalent to scrotum eczema. Some patients with “flexural lesions of elbows and knees” have been early noticed and named “four-flexural winds”. Obviously, this phenotype is the equivalent of AD according to the criteria from western countries.

It was not until Hanifin & Rajka criteria were introduced in China in the mid 1980's, dermatologists began to pay attention to focus and recognize AD as a single entity. They took great effort to recite and apply indiscriminately the criteria and made diagnosis of AD. In 1989, Kang and Tian collected clinical and laboratory findings from 372 Chinese patients with the phenotype of AD and suggested two basic features and six groups of minor features³. It is now recognized as a summary and simplified version of Hanifin & Rajka criteria. In 2001, Gu et al. evaluated the sensitivity and specificity of the U. K. Working Party criteria as well as Kang and Tian criteria in diagnosing AD in China. They

used the Hanifin & Rajka criteria as gold standard⁴, indicating that AD is diagnosed by dermatologists strictly according to criteria at that time. Recently, a set of criteria for adult/adolescent AD was proposed by Liu et al. including one essential condition, i.e. “symmetrical eczema (dermatitis) for more than 6 months” plus one or more of the following “personal and/or family history of atopic diseases” and/or “elevated total serum IgE level and/or positive allergen specific IgE and/or eosinophilia”⁵. These criteria automatically ruled out atypical forms of AD.

In recent years, dermatologists in hospitals carrying out clinical or basic research were pioneers in questioning the established approach, i.e. using a stringent application of the H&R criteria. They also addressed some key issues such as (i) the comparative perception and the meaning of AD and eczema in China and other regions of the world and (ii) the impact of these differences in terms of epidemiology, i.e. seemingly lower prevalence in China.

From December 2013 to February 2014, a group of well experienced Chinese dermatologists conducted a nation-wide study in 12 metropolises to explore the prevalence of AD in China⁶. The prevalence of AD based on clinical diagnosis by dermatologists was 12.94% overall. However, when stringently using U.K. Working party and Hanifin & Rajka diagnostic criteria of each subject, the prevalence of AD among the same population was drop down to 4.76% and

4.62%, respectively. The detailed analysis showed that a significant number of cases of mild phenotypes could not fulfill the diagnostic criteria. This was further supported by the fact that when using SCORAD as a severity scoring system in the pediatric population, mild AD accounted for 74.6% of all AD ⁶.

In summary, the stringent use of the classical criteria of Hanifin and Rajka seems inappropriate for the diagnosis of AD in China. Whether this may also be partly due to possible differences in the clinical phenotype related to the ethnic background needs to be further explored. This has a substantial impact on epidemiology as well as many other aspects related to basic research up to translational and drug development programs in this country. On the other hand, quite a few Chinese dermatologists have recognized the gap between Chinese and international view on the diagnostic criteria of AD, as well as the need for harmonizing the name of AD on a global level. However, there is still a long way for most dermatologists in China to accept this uniform view on the disease.

Authors' contribution

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Revising it critically for important intellectual content: Thomas Bieber, Zhirong YAO

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