Excerpts from the Fourth International Congress on Epidemiology, Causes and Prevention of Skin Diseases

Updates on the Epidemiology of Atopic Dermatitis and Impacts of Research Studies beyond Pharmacological Treatments

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Introduction

The Fourth International Congress on Epidemiology, Causes and Prevention of Skin Diseases was held in October 2004, in Venice, Italy. This is an annual event hosted by the International Dermato-Epidemiology Association and the European Dermato-Epidemiology Network.

54 oral presentations were delivered by international delegates, along with many poster presentations. The congress was well attended in the medieval church San Giovanni Evangelista, Scuola Grande, with an excursion to the Romanic Cathedral, Torcello Island, for part for the conference. A wide repertoire of dermatological diseases was discussed. I reported some of the advances in the epidemiological studies of atopic dermatitis (AD), a common condition encountered by medical practitioners in Hong Kong.

Atopic dermatitis and mental health in adolescents

Professor Marit Saunes, Department of Dermatology, St Olavs Hospital, Trondheim, the Netherlands, presented his findings for the association of AD and mental distress in adolescents. His team of investigators requested 8984 students aged 13-19 to complete a questionnaire. Apart from general questions on health and lifestyle, there were specific questions on AD and validated questions from the Hopkins Symptoms Check List 25.

AD was reported in 13.3% of girls below 17 years and 15.0% of girls above 17 years. The corresponding prevalence for boys was 6.3% and 7.9% respectively. A significant association between AD and mental stress was found for girls and for adolescents between AD and mental distress in adolescents. The investigators concluded that AD in childhood is a significant risk factor for hand dermatitis later in life, and might significantly affect work.

Prevalence of childhood atopic dermatitis in Tianjin, China

The prevalence of AD varies to a large extent in different countries. Professor Sanwu Zeng, Department of Public Health, Tianjin Medical University, China, presented his findings from a questionnaire survey on a cluster sample of 4483 children in kindergartens and primary schools in Tianjin.

For questionnaires completed by parents indicating the presence of AD, physical examination by a dermatologist was arranged to confirm the diagnosis.

The investigators found a crude prevalence of 2.9% for children aged one to six. The prevalence in the city was 2.4%, that in the rural areas being 3.5%. They concluded that the prevalence of AD in this part of China is relatively low, with insignificant difference between city and rural areas. However, the incidence is expected to rise with the modernisation of the region.

Effect of childhood atopic dermatitis on the future working life

Dr Nyren Miruna, Department of Occupational and Environmental Dermatology, Stockholm County Council, Sweden, presented her findings on a population-based follow-up study of 405 individuals with history of AD in childhood and 378 control subjects. Hand dermatitis in adulthood was reported by 24% of study subjects and 9% of controls in the previous 12 months (p < 0.001). 42% of study subjects and 9% of controls had hand dermatitis at least once in life (p < 0.001). There was no difference between the two groups with respect to jobs with high risk for hand dermatitis and with respect to irritant exposure. 9% of study subjects and 2% of controls (p < 0.001) changed jobs due to dermatitis.

The investigators concluded that AD in childhood is a significant risk factor for hand dermatitis later in life, and might significantly affect work.

The association of early infections and atopic dermatitis

Dr Antonio Chuh, a family physician and a part-time staff of the Department of Community and Family Medicine, The Chinese University of Hong Kong, presented a retrospective case-control study in primary care. Clinical records of 132 infants and children (below eight years of age) with a diagnosis of AD fulfilling the United Kingdom Working Party diagnostic criteria were retrieved. They also retrieved 132 records of age-and-sex pair-matched control subjects without AD. History of clinical infection, febrile episodes, hospitalisations, and use of antibiotics before the age of six months were insignificantly different for the study and control subjects.

Dr Chuh concluded that there exists no significant association between early infections and the risk of AD in their sample of Chinese children in primary care in Hong Kong. Factors other than a low infection rate related to better hygiene may account for the rising trend of AD.

The effectiveness of self-management in atopic dermatitis

Dr Thomas Diepgen, Department of Clinical Social Medicine and Occupational and Environmental Dermatology, University of Heidelberg, Germany, discussed the impacts of age-related standardised group intervention programmes for AD in children and adolescents. The patients with relatively severe AD were randomised into intervention groups receiving six weekly group sessions and control groups for whom such sessions were to be offered later after completion of the study.

The programme was found to have significant impact on long-term disease severity indexes as well as quality of life scores. Such has far fetching implications on resource allocation for non-pharmacological interventions for skin diseases in the future.
The natural course of atopic dermatitis - model-based clustering by latent class mixture models

Dr Diepgen also presented his findings on a prospective cohort study on 1314 newborn babies. The investigators followed up these children for over seven years and identified four subgroups of children with respect to their risk of AD. The first group were children with no AD. The second group were children with an age-independent estimated prevalence of AD. The third group consisted of children with an increasing prevalence of AD, while the fourth group were children with high risk of AD at time of birth with increasing age-dependent risk. The investigators hope to develop from such clustering models predictions to future prevalence of AD in the community.

Messages for medical practitioners in Hong Kong

The principal message of the conference is that whilst there are many studies on different treatment approaches to dermatological diseases, the epidemiology of most skin diseases is not well investigated. This has pertinent implications in identifying the aetiologies, risk factors, exacerbating factors, preventive strategies, and complications of skin diseases. AD is a prominent example. The prevalence of AD has been increasing by two to three folds in developed countries during the past decades. Its prevalence remains low in developing countries.

Environmental rather than genetic factors are likely to be the major culprits for such rising trend. Some studies have led to postulations that the rising prevalence is related to better hygiene in developed countries leading to fewer infections in early infancy (the ‘hygiene hypothesis’). The diminished exposure to infections may lead to decreased TH1-type responses, secondarily inducing enhanced TH2-type inflammation in AD. Other studies, however, do not support such a hypothesis, and the roles of other factors such as pollutants, altered diet, altered colonisation by lactobacilli, and altered exposure to domestic pets remain to be elucidated.

The second message is that epidemiological research in skin diseases are important in planning for healthcare delivery. Again, AD serves as a good example. Our healthcare system including the training of professionals and the infrastructure has to cater for the increasing prevalence of skin diseases.

Another message is that conditions considered relatively minor ailments in the past can affect not only the quality of life of the sufferers here and now. They might have significant impacts on the working capacity of these individuals decades later, with implications on the economic status of the families concerned and financial burden and productivity of the society as a whole.

The fourth message is that many ongoing studies in the treatment of skin diseases adopted physician-rated and objective indexes as the sole outcome measures. While the clinician manages the disease, the patient experiences the illness. These two can have starkly different magnitudes and meanings in some dermatological conditions. If possible, future studies should incorporate patient-rated and subjective indexes such as quality of life as primary outcome measures.

Generic quality of life measurements might not always be applicable to research in organ-specific diseases as another message. Organ-specific quality of life instruments (e.g. specific for AD or psoriasis) may be better choices for research studies investigating specific conditions and comparing impacts of different treatment modalities.

Another message is that objective diagnostic criteria for skin diseases should be adopted wherever feasible in research studies. Such fortifies the credibility of the diagnoses concerned and renders studies from investigators around the globe be readily compared with each other.

The final message is that non-pharmacological aspects of management are frequently neglected by medical practitioners and policy makers. These can have significant long-term impacts on the quality of life of patients. Not a single drug name was mentioned in this article. Throughout the text, the emphasis was that interventions implemented at an individual level may not suffice. Major health gains may only be achieved through multidisciplinary initiatives aimed to correct the imbalance between individuals and society. The spirit of evidence-based medicine does not thrive only in the choice of medical or surgical interventions. It also flourishes in other modalities of interventions, epidemiology, diagnosis, and prevention of skin diseases.

References: