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Reports on Scientific Meetings

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Reported by HL Lo 盧曉麗 and SP Ma 馬少鵬

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Psoriasis as a systemic inflammatory disease: The role of IL-23/Th17 immune axis in the pathogenesis of psoriasis and comorbidities

Speaker: H Chan
Division of Dermatology, Department of Medicine, The University of Hong Kong, Hong Kong

Psoriasis is a T-cell-mediated inflammatory disease and is well-known to be related to systemic comorbidities such as metabolic syndrome and cardiovascular disease. Pleiotropic effects of Th1 and Th17 on processes such as adipogenesis, angiogenesis, insulin signalling and immune cell trafficking are postulated to be the link between psoriasis and systemic comorbidities.

Professor Chan's group examined the prevalence and extent of subclinical atherosclerosis in psoriasis patients with matched controls. Reduced endothelial progenitor cells among psoriasis patients was found to contribute to vascular abnormalities. Their recent study also found that skin microbiome differences between psoriasis and normal patients might help with early detection and intervention.

IL-23 inhibitors are the latest class of biologics developed for treating psoriasis. Blockade of IL-23 hinders the formation of 'pathogenic' Th17 and hence leads to reduction of downstream cytokines release including IL-17. IL-23 inhibitor guselkumab was able to demonstrate up to five years sustained efficacy and safety in recent data. Moreover, it also demonstrated the potential of achieving 'molecular clearance'.

Learning points:

The associated cardiovascular comorbidities such as arterial stiffness could be attributed to abnormal endothelial progenitor cells in psoriasis patients. Skin microbiome differences between psoriasis and normal patients might help with early detection and intervention. In order to evaluate the long-term effectiveness of newer biologics such as IL-23 inhibitors and their effects on systemic comorbidities in psoriasis patients, more research would be needed.

The game changer for moderate-to-severe atopic dermatitis in adolescents

Speaker: CH Hong
Division of Dermatology, University of British Columbia, Canada

Atopic dermatitis (AD) is a common chronic inflammatory dermatitis with significant impact on itch, sleep and quality of life (QOL). For optimal control, regular emollient use should be part of the basic day-to-day care. Daily bathing followed by immediate application of emollients is recommended. Beach baths and wet wrap may be considered in some cases. Food avoidance, elimination diets, bath additives, topical antihistamines and oral sedating antihistamines are not recommended for the routine management of paediatric AD.

Topical therapies including corticosteroid (TCS), calcinerium inhibitor (TCI) and PDE-4 inhibitors should be used first-line for paediatric AD. TCS and TCI may be used for both maintenance and prevention of flares as well. Phototherapy may be considered in paediatric patients with AD with NBUVB being the preferred treatment.

Systemic therapies such as methotrexate and cyclosporine A may be considered in paediatric patients in whom AD is not adequately controlled by topical therapy +/- phototherapy. Dupilumab is approved for long-term use in moderate-to-severe AD for patients 12-17 years of age. It is a fully human monoclonal antibody targeting the IL-4R alpha subunit of the IL4 and IL13 receptors which are type 2 cytokines that mediate many features of AD. Dupilumab is approved for treatment of patients aged 12 years or older with moderate-to-severe AD whose disease is not adequately controlled with topical therapies or when those therapies cannot be used. Dupilumab can be used with or without TCS.

The efficacy and safety of Dupilumab (versus placebo) in adolescents (12-17 years old) with moderate-to-severe AD have been proven in clinical trials. The beneficial effects (IGA 0 or 1, EASI-75) were seen as early as four weeks. In adolescents with moderate to severe AD, dupilumab treatment resulted in a statistically significant improvement in AD and QOL. Dupilumab had an acceptable safety profile, similar to that observed in the adult AD population. Common adverse events were nasopharyngitis, upper respiratory tract infection, injection-site reactions, skin infections, and conjunctivitis. These were mild-to-moderate in nature, and overall rates of adverse events were similar between treatment and placebo groups. Both the placebo-corrected efficacy and safety of dupilumab in adolescents were similar to those observed in adults.

Learning points:

Dupilumab is a monoclonal antibody that antagonises the alpha subunit of the IL-4 receptor which in turn modulates the inflammatory signalling of IL4 and IL13 pathways in AD. Dupilumab is current the only systemic therapy approved for use in moderate-to-severe AD for patients aged 12-17 years. Clinical trials have shown dupilumab significantly reduces the severity and symptoms of atopic dermatitis and improves QOL in adolescents with moderate-to-severe AD with good safety profile.