

Dermatology symposium

M Sivaramakrishnan

Dermatology registrar, Ninewells Hospital, Dundee, UK

The Dermatology symposium was held on 15 May 2014 at the Royal College of Physicians of Edinburgh

DECLARATION OF INTERESTS No conflict of interests declared.

Correspondence to
M Sivaramakrishnan
Ninewells Hospital
Dundee DD1 9SY
UK

e-mail muthusivaramakrishnan@nhs.net

INTRODUCTION

Major advances in the understanding of cutaneous physiology, molecular basis of diseases and treatment modalities have increased the scope of successful treatment of various dermatological diseases. This symposium addressed the advantages and disadvantages of changes in lifestyle behaviour due to increased public health awareness, covered advances in the management of dermatological diseases and provided a comprehensive knowledge of the latest approaches in the management of these conditions.

SESSION 1: WHAT'S NEW IN DERMATOLOGY?

Professor Julia Newton-Bishop (Section of Epidemiology and Biostatistics, Leeds Institute of Cancer and Pathology) described the advances in the understanding of causation of melanoma based on her extensive research in this field. Sun-sensitive phenotypes and reported sunburn were associated with an increased risk of melanoma and the protective effect of regular weekend sun exposure was seen, particularly for limb tumours in the Leeds case control study.¹ Increased sunny holidays and acute sunburn particularly among men explains, at least in part, the increasing incidence of melanoma. Genome wide association studies have identified 19 susceptibility loci which are commonly related to pigment genes or genes associated with naevus number or telomere length. Wide local excision is still the management of choice for primary melanoma. Targeted therapeutic agents such as BRAF and MEK inhibitors and immunotherapeutic agents such as anti-CTLA4 antibodies have raised hopes in the management of stage 4 melanoma but are limited by significant adverse effects and secondary resistance.

Professor John McGrath (King's College London) gave an overview of his work and how the field of translational molecular research is leading to therapeutic innovation

in the management of inherited skin diseases. For example, clinical trials involving intradermal injection of fibroblasts derived from allogeneic fibroblasts, subcutaneous injection of allogeneic mesenchymal stromal cells and bone marrow transplantation for severe forms of epidermolysis bullosa.² Other advances that Professor McGrath's group have made include punch grafting, culturing of reverted keratinocytes and creating inducible pluripotent stem cells to generate skin progenitors.

Dr Daniel Creamer (King's College London) provided an interesting overview of various types of serious adverse cutaneous drug reactions emphasising in particular drug reaction with eosinophilia and systemic symptoms (DRESS) syndrome, Stevens Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN), drawing on his own extensive experience in this field.³ The diagnosis can often be delayed in these cases leading to increased mortality and morbidity. The vital management strategies in these conditions are stopping the offending drug, intensive management of loss of skin and mucosae, preventing and treating secondary infections and the management of fluid loss and temperature. These patients need long term support due to chronic physical complications and psychological distress caused by these conditions.

SESSION 2: PUBLIC HEALTH IN DERMATOLOGY

Dr Richard Weller (University of Edinburgh Centre for Inflammation Research) explained that sunlight may be beneficial rather than harmful to human cardiovascular health. Epidemiological studies demonstrate that individuals with non-melanoma skin cancer have half the relative risk of all-cause death compared to the general healthy population. This could be due to UVA leading to

the production and mobilisation of nitric oxide (an arterial vasodilator) and thereby reducing blood pressure independently of vitamin D production.⁴

STANLEY DAVIDSON LECTURE

Professor Hans Christian Wulf (Bispebjerg Hospital, University of Copenhagen) has extensive research experience in the area of human behaviour in the sun. He presented the Stanley Davidson lecture and emphasised how the sun behaviour of the general population is influenced by several factors such as age, occupation, outdoor sports, holidays and the use of sunbeds.⁵ UV exposure remains mainly constant for every individual through the seasons but increases by 30–50% on a Mediterranean holiday. This inevitably results in sunburn. Reducing exposure between 11am and 3pm halves the amount of overall exposure and should be encouraged. Regular weekly sunbed use for a year has been shown to double the amount of UV exposure, increasing the risk of skin cancer. It seems that after a diagnosis of skin cancer, patients only follow advice about careful behaviour in the sun for a year and that this additional care reduces back to baseline thereafter.

SESSION 3: HOW SHOULD WE DO IT?

Professor Nicholas Reynolds (Newcastle University and Royal Victoria Infirmary) outlined the management of severe atopic eczema, based on the literature and his own extensive experience. He emphasised the importance of patient education, including demonstration of topical management and early review to check tolerance and compliance in poor responders. Phototherapy plays a vital role in second line management with narrowband UVB phototherapy⁶ being useful as first line phototherapy and UVA1 and psoralen-ultraviolet A (PUVA) both also effective in selected patients. There is evidence that ciclosporin, azathioprine and methotrexate can be effective third line systemic agents. There is no robust evidence for the effectiveness of rituximab, mycophenolate and omalizumab. Biological therapies are starting to emerge and promising data on efficacy of anti-IL4R α mAb is appearing.

Dr Mark Goodfield (Leeds General Infirmary) gave a practical overview of the management of cutaneous lupus, which illustrated his own wealth of experience in this field. Sun-avoidance and protection, topical anti-inflammatory agents and early use of antimalarials are effective in 60% of patients.⁷ Alternative therapies include dapsone, oral gold and oral retinoid. Methotrexate, thalidomide and a combination of ciclosporin and mycophenolate have the highest response rate in the resistant group. UVA1 phototherapy, intravenous immunoglobulins, prostacyclin, acitretin, pulsed cyclophosphamide and rituximab combined either with

pulsed methylprednisolone or pulsed cyclophosphamide can be useful in selected clinical situations. Emerging therapies include belimumab and sifalimumab.

SESSION 4: HOW SHOULD WE DO IT? – CONTINUED

Dr Sally Ibbotson (Ninewells Hospital, Dundee) described the clinical presentation of various photodermatoses and emphasised the importance of having a high index of suspicion since presentation can be subtle. She highlighted the role of the National Photodiagnostic Service in Dundee. The mainstay of investigation is monochromator phototesting but other tests such as UVA provocation, photopatch testing may also be necessary based on clinical suspicion. Patient education regarding the diagnosis, general approach of photoprotection, behavioural measures, clothing cover, sunscreen use and vitamin D supplementation remain the mainstay of treatment but more specific immunomodulatory and immunosuppressive therapies may be required in patients with severe disease.

Dr Robert Dawe, as Lead Clinician for the Managed Clinical Network for phototherapy in Scotland, explained the types of phototherapy available to treat various dermatoses such as narrowband UVB, PUVA and UVA1. About 100 courses of whole-body phototherapy are given per 100,000 people in Scotland per year. There is good controlled study evidence to support the use of phototherapy to treat psoriasis, atopic eczema, chronic urticaria and vitiligo but phototherapy is also useful in the management of various other dermatoses. Clear decisions should be made about the type, starting dose, incremental regimen, choice of psoralen in the case of PUVA and duration of phototherapy to achieve best outcome with minimal side effects. Although an increased risk of skin cancer with high exposure to PUVA is established, studies to date show no significant increased skin cancer risk with narrowband UVB, although this needs to be kept under longer-term surveillance.

Professor David Burden (Western Infirmary, Glasgow) has extensive experience of the use of biologics for psoriasis and he discussed their indications, adverse effects and efficacy.⁸ Three of the four biologics (etanercept, infliximab and adalimumab) available for treating psoriasis are anti-TNF α molecules. Ustekinumab is directed against interleukin-12 and interleukin-23. Etanercept is licensed for use in children over six years of age and is relatively safe for use in pregnancy particularly in 1st and 2nd trimester. All these drugs are relatively safe, with mild soft tissue and respiratory infections being the most common adverse effects but rarer side effects such as malignancies, lymphomas and skin cancers are reported.

CONCLUSION

This is an exciting time in dermatology due to the advances in the understanding of the molecular basis of various diseases and the development of new drugs and therapeutic targets and translation of these findings into the clinical setting. A clear understanding of these advances and the latest approaches in the management of dermatological diseases is essential to provide best patient care.

REFERENCES

- 1 Newton-Bishop JA, Chang YM, Elliott F et al. Relationship between sun exposure and melanoma risk for tumours in different body sites in a large case-control study in a temperate climate. *Eur J Cancer* 2011; 47:732–41. <http://dx.doi.org/10.1016/j.ejca.2010.10.008>
- 2 Hsu CK, Wang SP, McGrath JA. Treatment of hereditary epidermolysis bullosa: updates and future prospects. *Am J Clin Dermatol* 2014; 15: 1–6. <http://dx.doi.org/10.1007/s40257-013-0059-z>
- 3 Lee HY, Walsh S, Creamer D. Initial presentation of DRESS: often misdiagnosed as infections. *Arch Dermatol* 2012; 148: 1085–7. <http://dx.doi.org/10.1001/archdermatol.2012.1079>
- 4 Liu D, Fernandez BO, Hamilton A et al. UVA Irradiation of human skin vasodilates arterial vasculature and lowers blood pressure independently of nitric oxide synthase. *J Invest Dermatol* 2014; 134: 1839–46. <http://dx.doi.org/10.1038/jid.2014.27>
- 5 Thieden E, Heydenreich J, Philipsen PA, Wulf HC. People maintain their sun exposure behaviour in a 5-7-year follow-up study using personal electronic UVR dosimeters. *Photochem Photobiol Sci* 2013; 12: 111–6. <http://dx.doi.org/10.1039/c2pp25138h>
- 6 Reynolds NJ, Franklin V, Gray JC et al. Narrow-band ultraviolet B and broad-band ultraviolet A phototherapy in adult atopic eczema: a randomised controlled trial. *Lancet* 2001; 357: 2012–6.
- 7 Wahie S, Daly AK, Cordell HJ et al. Clinical and pharmacogenetic influences on response to hydroxychloroquine in discoid lupus erythematosus: a retrospective cohort study. *J Invest Dermatol* 2011; 131: 1981–6. <http://dx.doi.org/10.1038/jid.2011.167>
- 8 Leman J, Burden AD. Sequential use of biologics in the treatment of moderate-to-severe plaque psoriasis. *Br J Dermatol* 2012; 3: 12–20. <http://dx.doi.org/10.1111/j.1365-2133.2012.11209.x>

THE COLLEGE JOURNAL PRIZE

The College Journal Prize 2014, sponsored by the Senior Fellows' Club, has been won by B Quinn et al for their paper 'A masquerading mass: an unusual presentation of IgG4-related systemic disease with tubulointerstitial nephritis'. This paper can be read in issue 2, 2014 at <http://www.rcpe.ac.uk/sites/default/files/harty.pdf>

A prize of £250 will be awarded to the first-named (or corresponding) author of an original research paper on a clinical topic, deemed by a panel of judges to be the best paper by a doctor-in-training (i.e. pre-consultant level) published in *The Journal of the Royal College of Physicians of Edinburgh* in issues 3 and 4, 2014 and issues 1 and 2, 2015. The paper will be selected by a panel of judges, including a senior Fellow, an active clinician and a member of the Editorial team. The prize-winner will be invited to give a short oral presentation based on his/her paper at the Trainees and Members' symposium in October 2015.

Further details may be obtained from the Editorial Office, RCPE, 9 Queen Street, Edinburgh EH2 1JQ, tel +44 (0)131 247 3666 or email editorial@rcpe.ac.uk.