

Synopsis: What is the most important advance in dermatology in the last 25 years?

The last 25 years have seen the exciting hallmarks of dermatological advancements come in many forms. Genetic and therapeutic innovation has accelerated our understanding of the mechanisms underlying cutaneous disease and broadened treatment options, whilst evolution of the sub-specialty psychodermatology is addressing the demand for holistic management, and the combined feat of continued education, research and public awareness continues to raise the profile of the dermatological discipline. Collectively, these developments are paramount to the success of the unique medico-surgical specialty we behold today.

Lasers

Significant advances in the development and use of lasers has revolutionised their application in the practice of modern dermatology. The destructive potential of the laser (*light amplification by stimulated emission of radiation*), its role first established in skin by Goldman et al in their treatment of tattoos,¹ has since been harnessed, focused and refined to produce a versatile tool currently at the forefront of management for many dermatological conditions.

Melanoma genetics and targeted therapies

Metastatic melanoma has historically portended a poor prognosis. Limited treatment options for advanced disease, punctuated by an intrinsic resistance to chemotherapy and a tendency for rapid progression, makes the escalating number of cases especially troubling. With this in mind, the landmark discovery of activating mutations in the BRAF oncogene,² present in up to half of all malignant melanomas, offered renewed hope in the battle

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against metastatic and recurring melanomas; it provided an opportunity for tumour genotypes to be translated into clinically effective targeted therapies.

Biologics

The emergence of biologic agents has transformed the management of many autoimmune diseases, including those of a cutaneous nature. Since the advent of the first UK approved biologic in 2004, they have become a particularly prominent tool in the treatment of psoriasis.³

Psychodermatology

Dermatologists and patients alike have long been aware of the complex interplay between mind and skin. Cutaneous disease has not only the potential to considerably influence one's mental and emotional wellbeing, but may also be stimulated by the detrimental effects of various negative psychological states itself. In response to a continually expanding body of research highlighting this interactive relationship, the field of psychodermatology has gained significant ground in recent years. Psychodermatology encapsulates the very interaction between skin and the psyche. It addresses the psychosocial factors involved in the cycle between dermatological disease and mental health, and in doing so provides a strong source of support for patients.

Genetic skin disease

Discoveries in cutaneous genetics have been driven by important progression in sequencing technologies and genome wide association studies. In 2006, after 20 years of complex genetic analysis, the underlying genetic component of atopic dermatitis (AD) was finally unravelled. The identification of 2 common polymorphisms associated with AD⁴ signifies the

single most significant breakthrough in understanding the genetic aspects involved in the complex aetiology of this very common disease.

Raising awareness in dermatology

Efforts to raise the profile of the dermatological discipline, a field often regarded as a 'Cinderella specialty'⁵ by those who commission services, have been propelled by the continued education and training of physicians, increased public awareness of skin disease, and the charitable funding of essential research.

Conclusion

Each of these exciting advancements have been pivotal to the continued progression of dermatology. Nevertheless, it is those aspects of progression that are beyond the remit of the laboratory that have perhaps had the biggest impact. From the cultivation of an increased awareness of dermatology and its diseases to the offerings of a sub-specialty that honours the values of patient-centred care and a holistic approach, these contributions to the discipline are far-reaching and serve to expand and humanise the sphere of the dermatological field.

References

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