FEATURE

Presidential Symposium Offers Something for Everyone

Written by Maria Vinall

The Presidential Symposium featured 3 experts of diverse backgrounds and interests. Ljiljana Medenica, MD, Belgrade University School of Medicine, Belgrade, Serbia, opened the session with a discussion of the history of dermatologic moulages.

These wax models first appeared in Europe at the beginning of the 19th century, but it was not until 1889 that they received international attention, when they were displayed at the First International Congress for Dermatology and Syphilology. Attendees at the conference, impressed with the realistic depiction of various skin diseases that the moulages were able to achieve, quickly adopted them as teaching aids. Moulages remained the major teaching aid in the field of dermatology and venereology until after World War II, when they were replaced by color photography.

The Belgrade moulage collection now holds 350 pieces. Prof Djordje Djordjevic (1885–1935) established the collection in 1925. Early works included moulages crafted by Theodore Henning of Vienna and several from the Deutsches Hygiene Museum in Dresden. A moulageur appeared on a staff list of the Clinic of Dermatovenereology in 1931; Dr Sergej Alisov and Vojislav Sikoparija were the first moulageurs at the clinic. Moulages made before World War II reflect the most common pathologies of the time, while those made after the war present a variety of rare and unusual cases as well as common diseases.

Although they are no longer made, moulages are a significant subject of medical and cultural historical research. "They represent an irreplaceable treasure, without which, the history of our profession would be, in many instances, severely impoverished," said Prof Medenica.

As a natural event, hyperthermia is the result of failed thermoregulation. It can, however, be deliberately induced with drugs or medical devices. Xing-Hua Gao, MD, No. 1 Hospital of China Medical University, Shenyang, China, discussed the use of hyperthermia in the treatment of warts.

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Human papillomavirus infection is an increasingly common condition. It is associated with neoplasms both benign (eg, verruca vulgaris, and plane, plantar and genital warts [condyloma acuminatum]) and malignant. Options for the management of benign neoplasms include laser and cryotherapy, immunotherapy (microbial vaccines), antimitotic therapy (retinoids), and combinations thereof. Although there are some reports of using hyperthermia for the treatment of warts, most are anecdotal.

Prof Gao discussed the results of an open trial in patients with common or plantar warts who received local hyperthermia for 30 minutes once daily for 5 consecutive days [Gao XH et al. *Chin Med J (Engl).* 2009]. The mean temperature used to treat hand warts was 43.5°C, while plantar warts were treated at a mean temperature of 45.3°C. After 3 months, 53.8% of cases were cured (37.5% of hand warts; 65.2% of warts on the feet).

Similar results were seen in a randomized controlled trial in 54 patients with plantar warts. After 3 months of treatment (44°C for 30 min/d for 3 consecutive days plus 2 additional days 2 weeks later), 53.57% of patients in the treatment group were cured, compared with 11.54% of patients in the control group ($P = .001$) [Huo W et al. *J Infect Dis.* 2009]. Patients with multiple lesions in both groups tended to have complete clearance of targeted and untargeted lesions.

Hyperthermia has also been used to successfully treat facial warts [Ma Y et al. *Dermatol Ther.* 2012], genital warts in pregnancy [Huo W et al. *Dermatol Ther.* 2014], and giant warts in diabetes mellitus.

Davinder Parsad, MD, Postgraduate Institute of Medical Education and Research, Chandigarh, India, reviewed the current state of research on vitiligo.

There are 2 goals in the treatment of vitiligo: halting the spread of depigmentation and regaining skin color. The first requires understanding the mechanisms for destruction of the melanocytes, while the second requires an understanding of what controls their proliferation.

Antioxidants have shown efficacy only in early-stage disease levels, when reactive oxygen species are low, although they may have a role in maintenance therapy. Most treatment focuses on immunosuppression. In addition to its antibiotic effects, minocycline has demonstrated anti-inflammatory, immunomodulatory, and free radical scavenging effects; it has recently been shown to protect melanocytes in vitro and may be used to prevent melanocyte loss in the early stage of vitiligo [Parsad D, Kanwar A. *Dermatol Ther.* 2010]. Unlike other conditions, vitiligo may be responsive to low-dose immunosuppressants. In a recent study, dexamethasone minipulse therapy (2.5 mg for 2 consecutive days per week for 6 months) was found to be as effective as oral minocycline (100 mg/d) in halting disease activity in patients with vitiligo, although the difference between the mean scores at the end of treatment was not statistically significant [Singh A et al. *Indian J Dermatol Venereol Leprol*. 2014]. Low doses of dexamethasone may also be a good option for arresting the progress of unstable vitiligo [Kanwar AJ et al. *J Cutan Med Surg.* 2013].

Inhibition of CXCL10 may be an important target for vitiligo treatment. In a recent animal study, investigators noted elevated levels of the chemokine CXCL10 in the skin and serum of mice with vitiligo [Rashighi M et al. *Sci Transl Med.* 2014]. In addition, CXCR3, a CXCL10 receptor, was expressed on pathogenic T cells. These results suggest a role for CXCL10 in the progression and maintenance of vitiligo. Another potential target is inducible heat shock protein 70 (HSP70i). HSP70i is upregulated by stress and helps protect cells from undergoing apoptosis. In vitiligo, HSP70i has been shown to reverse autoimmune depigmentation in mice [Mosenson JA et al. *Sci Transl Med.* 2013]. Additional immunomodulatory targets that may halt depigmentation include inhibition of the Akt pathway, mTOR, HIF-1α, Th17, and IL-2.

Multiple approaches are being considered to induce repigmentation. Afamelanotide is a potent and longer-lasting synthetic analogue of naturally occurring α-melanocyte-stimulating hormone that is administered as a series of 4 monthly implants. Afamelanotide has recently been shown to promote repigmentation in patients with vitiligo when used in conjunction with narrow-band ultraviolet B (UVB) phototherapy [Grimes PE et al. *JAMA Dermatol.* 2013]. Topical prostaglandin analogue is also being evaluated because of its role in melanocyte proliferation and melanogenesis [Parsad D et al. *Int J Dermatol.* 2002], but a specific dermatologic preparation is needed. Combination therapy is also an option and might include phototherapy plus topical steroids, vitamin D analogues, topical calcineurin inhibitors, surgical modalities, antioxidants, or dermabrasion plus 5-fluorouracil.

Sources of repigmentation, other than the hair follicle, include epidermal, marginal, and dermal stem cells. Prof Parsad is currently researching the use of visible light, ultraviolet A1, and narrow-band UVB to stimulate dermal stem cell differentiation into functional melanocytes. Another interesting source of melanocytes are multilineage-differentiating stress-enduring cells: a distinct stem cell type that can be more easily reprogrammed into functional melanocytes [Tsuchiyama K et al. *J Invest Dermatol.* 2013].

Autologous noncultured epidermal cell suspension and autologous noncultured extracted hair follicle outer root sheath cell suspension are safe and effective surgical approaches commonly used in the treatment of stable vitiligo [Singh C et al. *Br J Dermatol.* 2013]. Noncultured epidermal cell suspension is emerging as the treatment of choice for *surgical* management of stable and segmental vitiligo, as it allows for treatment of large and difficult areas. Color match is excellent, and a new 4-compartment method has been developed for which laboratory support is not needed [Kumar R et al. *Br J Dermatol*. 2014].