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Photoprotection against visible light

implications for clinical practice

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We read with interest the case report of a patient with solar urticaria exacerbated by visible light (VL) published by Wright and colleagues.¹ Dermatologists often highlight the importance of the use of sunblock with sun protection factor against ultraviolet A and B rays, yet many sunblocks fail to protect against VL. There is enough evidence at present to highlight the harmful effects of VL and its implication upon several photodermatoses including chronic actinic dermatitis, cutaneous porphyrias and solar urticaria, in addition to hyperpigmentary disorders.²

Inorganic filters (present in physical sunblocks) such as iron oxide can attenuate the effects of VL and must be visible on application ('tinted' to the user) to be efficacious.³ Iron oxide has been shown to be the most successful agent, protecting against both VL and UV rays.³ Tinted sunscreens containing iron oxide have shown to be more effective than those without iron oxide in reducing and scattering VL independent from the presence of inorganic filters such as titanium dioxide or zinc oxide.⁴ Iron oxide therefore can be inferred to play a key role in absorbing and neutralising VL. Sunblock containing iron oxide should be recommended in cases such as the one described as both a first-line of treatment and long-term prophylactic measure, as the solar urticaria in this case has been triggered by VL.

Evidence supporting the use of iron oxide containing sunblocks has been best illustrated in pigmentary disorders (such as melasma) to date.⁵ For example, in 68 patients with melasma the addition of iron oxide and zinc oxide (conferring additional VL protection as well as UV protection) to the sunblock (UV protection only), the group using UV- and VL-protective sunblock had greater improvements in measures of melasma severity compared to the UV-only protective sunblock alone.⁶ This beneficial effect can be extrapolated to other dermatoses triggered and affected by VL such as solar urticaria.² Objectionable aspects of VL sunblocks should also be acknowledged including the fact that most sunblocks that block VL will appear coloured on the skin which may be as undesirable as the *pigmentary disorder itself.

Other photodermatoses that require VL protection include the cutaneous porphyrias where the implicated wavelength is in the blue/violet range and is close to UV. Dundee Reflectant Sunscreen (Tayside Pharmaceuticals) is a large particle size reflectant cream, effective at blocking VL, and is available in three colours which aim to colour match one's skin tone.

Greater awareness about the importance of photoprotection against VL is needed, most importantly for patients with pigmentary disorders and photodermatoses.

Dermatologists should now ensure that beyond standard recommendations of the need for sun avoidance behaviour, patients with photodermatoses and pigmentary disorders⁶ that may be aggravated by VL should use sunblocks that protect from both UV radiation and VL as part of their photoprotective measures.

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