



Figure 1. A, B) Histopathological images of the skin lesion showing hyperkeratosis of the epidermis accompanied by parakeratosis, irregular thickening of the stratum spinosum with pseudoepitheliomatous hyperplasia, focal formation of microabscesses, proliferation of collagen in the upper and middle dermis, vasodilation, a relatively large number of lymphocytes and histiocytes around the blood vessels, and infiltration of a few eosinophils (magnification: x40, x100). C) Upon admission, an erythematous patch with an ulcer surrounded by a dark purple bulging border and yellow-white necrotic tissue on the surface, measuring 4.5 cm in diameter, could be seen on the right lower leg. D) After drug treatment for 18 days, the site of ulceration was not significantly reduced. E) After treatment with negative-pressure wound therapy for one week, the purulent secretion on the surface of the ulcer was reduced, and fresh granulation tissue could be seen. F) After negative-pressure drainage treatment for two weeks, the size of the ulcer decreased, exudate was significantly reduced and fresh granulation tissue increased. G) One week after discharge, ulceration size further improved. H) Two months after discharge, the ulcer had completely healed.

1. Alavi A, French LE, Davis MD, Brassard A, Kirsner RS. Pyoderma gangrenosum: an update on pathophysiology, diagnosis and treatment. *Am J Clin Dermatol* 2017; 18: 355-72.
2. Jing J, Zhou J, Shi X, Chen L. A case of pyoderma gangrenosum associated with takayasu's arteritis. *Chin J Dermatovenereol* 2021;35: 661-5.
3. Platzer KD, Kostner L, Vujic I, et al. Clinical characteristics and treatment outcomes of 36 pyoderma gangrenosum patients - a retrospective, single institution observation. *J Eur Acad Dermatol Venereol* 2019; 33: e474-5.
4. Xu A, Balgobind A, Strunk A, Garg A, Alloo A. Prevalence estimates for pyoderma gangrenosum in the United States: an age- and sex-adjusted population analysis. *J Am Acad Dermatol* 2020; 83: 425-9.
5. Pichler M, Thuile T, Gatscher B, et al. Systematic review of surgical treatment of pyoderma gangrenosum with negative pressure wound therapy or skin grafting. *J Eur Acad Dermatol Venereol* 2017;31: e61-7.
6. Huang C, Leavitt T, Bayer LR, Orgill DP. Effect of negative pressure wound therapy on wound healing. *Curr Probl Surg* 2014;51: 301-31.
7. Eisendle K, Thuile T, Deluca J, Pichler M. Surgical treatment of pyoderma gangrenosum with negative pressure wound therapy and skin grafting, including xenografts: personal experience and comprehensive review on 161 cases. *Adv Wound Care* 2020;9: 405-25.

doi:10.1684/ejd.2022.4210

Advocacy for a shared physician/patient approach for the management of acne, rosacea, seborrheic dermatitis and photo-damage

Over the last decades, actively involving patients in the care of their disease has gained traction in the global treatment approach of cancer and other chronic diseases, but also in skin diseases such as psoriasis and atopic dermatitis [1-3]. This is supported by new strategies and advancements in the domain of disease diagnostics, treatment and prevention, combined with the rapidly evolving digitization of medicine and consumerism.

Moreover, as the concept of exposome factors, impacting on the skin and involved in various skin conditions, has gained more and more interest during recent years, an exchange of information between the physician and the patient has become unavoidable [4, 5]. As such, the P4 (Predictive, Personalized, Preventive and Participatory) medicine approach may, for example, be an appropriate and practical approach to involve patients in the management of their skin conditions [6].

Here, we report our personal experience of a shared physician/patient model for the global management of four other skin conditions (acne, rosacea, seborrheic dermati-

tis and photodamage) which all have a significant impact on patients' quality of life, as discussed during a virtual meeting in November 2020.

As an outcome of our discussion and based on our experience, winning patients' confidence, providing them with clear and concise information on their condition, and explaining how they may participate are key to successful management of their chronic skin condition. Indeed, patients are increasingly aware and informed about their disease from the internet, TV shows, newspapers and magazines. However, these sources may be conflicting and erroneous, and may lead to non-adapted skin care, worsening the condition with even permanent damage [7, 8]. Identifying, together with the patient, internal and external exposome factors may help to predict potential situations that might have led to the onset or worsening of the condition and to a decreased quality of life [9, 10]. For acne, family history, nutrition and lifestyle habits are important to take into consideration, whereas excessive and unprotected UV exposure are important for rosacea and photoageing, and cleansing and climate conditions are important for seborrheic dermatitis. Providing patients with a diary to note occurrence may help physicians to identify the triggering factors, but also may help patients to be actively involved in disease management. Moreover, discussing with the patients their fears, concerns and constraints should not be neglected. Once a patient's profile has been established, a personalised treatment approach, combined with their participation, may be proposed.

In addition to prescribing and explaining the best adapted treatment, the patients should be advised about the relapsing and long-lasting nature of the condition that requires long-term pharmacological treatment and the potential risk-benefit ratio of the treatment. Therefore, cosmetic concerns may limit medication use, as well as side effects that can impact treatment compliance and outcome. Patients should be aware of the most appropriate skin care products to use and of the risks associated with using non-adapted skin care products. The use of non-aggressive cleansers and moisturisers and non-irritating appropriate photo-protection is important. Finally, as visible chronic skin conditions may impact patients' quality of life and mental well-being, a careful, psychological approach should always be taken into account.

In addition to these face-to-face discussions, further prevention through dedicated and validated educational programmes via the internet, advertisements, videos, information leaflets, patient associations and training sessions led by qualified nurses or others may lead to improved awareness and provide additional and updated information. Testimonials of "expert" patients, explaining the outcome of successful patient participation in disease management from the patients' point of view may even increase patients' confidence and stimulate them to follow their skin care programme.

In conclusion, making patients full partners in the management of their skin conditions is key to successful treatment outcome. However, in the context of the COVID-19 pandemic, limiting patient appointments, we feel that it is important to remember that a face-to-face approach is essential in order to establish a climate of mutual trust between the physician and the patient. ■

Acknowledgments and disclosures. The authors acknowledge the organisational and financial support of Marlène Chavagnac, NAOS, France and Karl Patrick Göritz, SMWS, France for the help in writing this article. Financial support: this work was organised and funded by NAOS, Lyon, France. Conflicts of interest: the authors received honoraria for participating in this work.

¹ Nantes Université, INSERM, CNRS, Immunology and New Concepts in ImmunoTherapy, INCIT, UMR 1302/EMR6001. F-44000 Nantes, France

² Department of Dermatology, University of California San Diego, La Jolla CA USA

³ Phillip Frost Department of Dermatology, University of Miami, Miami, USA

⁴ Dermatology Centre, NIHR Manchester Biomedical Research Centre, University of Manchester, Manchester, UK

<brigitte.dreno@atlanmed.fr>

<brigitte.dreno@wanadoo.fr>

Brigitte DRÉNO¹
Richard L. GALLO²
Enzo BERARDESCA³
Christopher E.M. GRIFFITHS⁴

1. Tian Q, Price ND, Hood L. Systems cancer medicine: towards realization of predictive, preventive, personalized and participatory (P4) medicine. *J Intern Med* 2012; 271: 111-21.

2. van de Kerkhof PC. Psoriasis in the perspective of predictive, preventive participatory and personalized medicine. *J Dermatolog Treat* 2018; 29: 107-8.

3. Dreno B, Amici JM, Demessant-Flavigny AL, et al. The impact of acne, atopic dermatitis, skin toxicities and scars on quality of life and the importance of a holistic treatment approach. *Clin Cosmet Invest Dermatol* 2021; 14: 623-32.

4. Passeron T, Krutmann J, Andersen ML, Katta R, Zouboulis CC. Clinical and biological impact of the exposome on the skin. *J Eur Acad Dermatol Venereol* 2020; 34: 4-25.

5. Dréno B, Bettoli V, Araviiskaia E, Sanchez Viera M, Boulloc A. The influence of exposome on acne. *J Eur Acad Dermatol Venereol* 2018; 32: 812-9.

6. Hood L, Friend SH. Predictive, personalized, preventive, participatory (P4) cancer medicine. *Nat Rev Clin Oncol* 2011; 8: 184-7.

7. Connolly D, Vu HL, Mariwalla K, Saedi N. Acne scarring-pathogenesis, evaluation, and treatment options. *J Clin Aesthet Dermatol* 2017; 10: 12-23.

8. Oge LK, Muncie HL, Phillips-Savoy AR. Rosacea: diagnosis and treatment. *Am Fam Physician* 2015; 92: 187-96.

9. Dreno B, Bordet C, Seite S, Taieb C. Acne relapses: impact on quality of life and productivity. *J Eur Acad Dermatol Venereol* 2019; 33: 937-43.

10. Chernyshov PV, Lallas A, Tomas-Aragones L, et al. Quality of life measurement in skin cancer patients: literature review and position paper of the European Academy of Dermatology and Venereology Task Forces on quality of life and patient oriented outcomes, melanoma and non-melanoma skin cancer. *J Eur Acad Dermatol Venereol* 2019; 33: 816-27.

doi:10.1684/ejd.2022.4236