homocysteine-lowering B vitamins after coronary angiography: a randomized controlled trial. *JAMA* 300:795–804

Friedewald VE, Cather JC, Gordon KB *et al.* (2008) The editor's roundtable: psoriasis, inflammation, and coronary artery disease. *Am J Cardiol* 101:1119-26

Gelfand JM, Neimann AL, Shin DB *et al.* (2006) Risk of myocardial infarction in patients with psoriasis. *JAMA* 296:1735–41

Helfand M, Buckley DI, Freeman M *et al.* (2009) Emerging risk factors for coronary heart disease: a summary of systematic reviews conducted for the U.S. preventative services task force. *Ann Intern Med* 151:496–507

Jefferis BJ, Whincup PH, Welsh P *et al.* (2009) Circulating TNF-alpha levels in older men and women do not show independent prospective relations with MI or stroke. *Atherosclerosis* 205:302–8

Melander O, Newton-Cheh C, Almgren P *et al.* (2009) Novel and conventional biomarkers for prediction of incident cardiovascular events in the community. *JAMA* 302:49–57

Naldi L, Chatenoud L, Linder D *et al.* (2005) Cigarette smoking, body mass index, and stressful life events as risk factors for psoriasis: results from an Italian case–control study. *J Invest Dermatol* 125:61–7

Rzany B, Naldi L, Schaefer T *et al.* (1997) The diagnosis of psoriasis: diagnostic criteria. *Br J Dermatol* 137:661–2

Sattar N, Crompton P, Cherry L *et al.* (2007) Effects of tumor necrosis factor blockade on cardiovascular risk factors in psoriatic arthritis. *Arthritis Rheum* 56:831–39

Stern RS, Nijsten T, Feldman SR *et al.* (2004) Psoriasis is common, carries a substantial burden even when not extensive, and is associated with widespread treatment dissatisfaction. *J Investig Dermatol Symp Proc* 9:136–9

Strober B, Teller C, Yamuchi P *et al.* (2008) Effects of etanercept on C-reactive protein levels in psoriasis and psoriatic arthritis. *Br J Dermatol* 159:322–30

Strober B, Young M, eds. (2009) Addressing cardiovascular comorbidities in psoriasis patients. *Biol Bull* 4:1–15

Wakkee M, Herings RMC, Nijsten T (2009) Psoriasis may not be an independent risk factor for acute ischemic heart disease hospitalizations: results of a large population-based Dutch cohort. *J Invest Dermatol* 130:962–7

Waxman HA (2005) The lessons of Vioxx—drug safety and sales. *N Eng J Med* 352:2576–8

Wilson PWF, Nam BH, Pencina M *et al.* (2005) C-reactive protein and risk of cardiovascular disease in men and women from the Framingham heart study. *Arch Intern Med* 165:2473–8

See related article on pg 962

Psoriasis and Cardiovascular Risk: Strength in Numbers

Joel M. Gelfand[1,2], Rahat S. Azfar[1,2,3] and Nehal N. Mehta[2,4]

In this issue, Wakkee and colleagues report a self-described exploratory cohort study and conclude that psoriasis may not be an independent risk factor for ischemic heart disease (IHD) hospitalization and that there is only a slight and borderline increased risk of ischemic heart disease among psoriasis patients. This negative result should be interpreted in light of the study's limitations, the complex relationship among levels of psoriasis severity, patient age, and cardiovascular (CV) risk, and the context of the rapidly growing literature.

Journal of Investigative Dermatology (2010) **130**, 919–922. doi:10.1038/jid.2010.12

When interpreting a negative study, two basic principles must be evaluated. First, are the data on exposure, outcome, and covariables (such as confounders) valid? By valid, we mean does the study measure what it intends to measure? Database studies, especially those using administrative data in which the primary purpose is for payment, are prone to error in that the electronic code entered by a health care provider or administrator may not reflect the true clinical state of the patient (Strom, 2005). Such errors (called misclassification bias) may mask true associations and yield false-negative results. Multiple approaches are necessary to validate a database code, including medical-record review to determine the predictive value of an electronic code to reflect the true clinical state (Rawson and D'Arcy, 1998). For example, in the General Practice Research Database (GPRD), the positive predictive value of a psoriasis code was about 90%, based on a medical record review conducted by general practitioners 3–4 years after the entry of diagnostic codes (Neimann *et al.*, 2006). Similarly, other investigators have shown in the GPRD that the positive predictive value of an acute myocardial infarction (MI) code is 90% based on a review of medical-record data that included factors such as diagnostic electrocardiogram changes, chest pain presentations, and cardiac enzymes (Meier *et al.*, 1998; Hammad *et al.*, 2008).

Wakkee and colleagues (2010, this issue) do not present data on the positive predictive value of their coding algorithm to measure the exposure of interest (psoriasis) or the outcome of interest (hospitalizations for ischemic heart disease (IHD)) using the gold standard of medical-record review. Thus, one cannot exclude misclassification bias as a source of error that explains their negative results. Furthermore, Wakkee *et al.* did not report the results of their multivariable model, so we are unable to determine whether their approach was able to confirm the expected relationships between cardiovascular (CV) risk factors and hospitalization for acute IHD (von Elm *et al.*, 2007).

The second basic principle is statistical error. The key question is whether a study has the statistical power to detect a clinically meaningful association, if one truly exists. Wakkee *et al.* show in Table 2 of their article that the hazard ratios for acute IHD hospitalization (primary end point) and acute myocardial infarction (secondary end point), adjusted for prior use of antihypertensive, antidiabetic, and lipid-lowering

[1]*Department of Dermatology, University of Pennsylvania, Philadelphia, Pennsylvania, USA;* [2]*Center for Clinical Epidemiology and Biostatistics, University of Pennsylvania, Philadelphia, Pennsylvania, USA;* [3]*Division of Dermatology, University of Pennsylvania, Philadelphia Veteran's Administration Medical Center, Philadelphia, Pennsylvania, USA and* [4]*Division of Cardiovascular Medicine, University of Pennsylvania, Philadelphia, Pennsylvania, USA*

Correspondence: Joel M. Gelfand, 1471 Penn Tower, 1 Convention Avenue, Philadelphia, Pennsylvania 19104, USA. E-mail: Joel.gelfand@uphs.upenn.edu

drugs, and a measure of health utilization were 1.05 (95% confidence interval 0.95 to 1.17) and 0.94 (0.80, 1.11), respectively. However, in the general population, the majority of patients (about 80%) have mild psoriasis (≤2% body surface area) and a small minority (about 5%) have severe disease (>10% body surface area), meaning that the analysis is driven by patients with mild psoriasis (Stern *et al*., 2004; Kurd and Gelfand, 2009). Although their primary finding was not statistically significant, their point estimate of the association of psoriasis overall (e.g., not restricted to severe disease) with acute IHD is similar to our own results and to the results of others (Gelfand *et al*., 2006; Brauchli *et al*., 2009). This small association requires additional studies to confirm, but it could be important from a public health point of view because an estimated 125 million people are affected by psoriasis worldwide (National Psoriasis Foundation, http://www.psoriasis.org/netcommunity/learn_statistics).

> Database conclusions, using information gathered for different reasons, must be interpreted with care.

Of special interest, however, is the impact of severe psoriasis on CV risk. Wakkee and colleagues (2010) do not report the hazard ratio with 95% confidence interval in patients who have severe psoriasis (such as patients requiring treatment with systemic drugs or phototherapy). Thus, we cannot determine whether the authors' study had sufficient statistical power to detect a meaningful association between severe psoriasis and acute IHD, nor can we determine whether their point estimate of association was similar to that of other studies (von Elm *et al*., 2007). Finally, given that the *relative* risk of CV events is greatest in younger patients with severe disease, this finding should be accounted for in multivariable models (Mallbris *et al*., 2004; Gelfand *et al*., 2006; Brauchli *et al*., 2009). This finding, referred to as effect modification or statistical interaction, is difficult to detect because of limitations of statistical power. Wakkee and colleagues attempted to evaluate effect modification by stratification on an arbitrarily selected age (i.e., 65 years); however, this approach may be too simplistic because age is the most important risk factor for CV disease. Importantly, atherosclerosis and IHD are diseases of aging, and CV risk follows a quadratic, hyperbolic curve in which the competing risk of age, especially after age 50, outweighs accelerating risk factors for atherosclerosis such as the metabolic syndrome (Wilson *et al*., 1998; Gelber *et al*., 2008). Therefore, we cannot determine whether the lack of effect modification by age reported by Wakkee is valid, because it may be attributable to a lack of statistical power or to selecting an incorrect age on which to dichotomize.

All good science depends on other investigators confirming the findings using robust approaches. Older epidemiological approaches, which were more sensitive to bias, have yielded conflicting findings (McDonald, 1989). For example, Stern compared the rates of CV mortality in a cohort of patients with generally severe psoriasis derived from a clinical trial of psoralen plus UVA at tertiary-care medical centers with those in the general US population and found that the point estimate for psoriasis was actually protective for CV death but not statistically significant (standardized mortality ratio for CV mortality, 0.83 (90% confidence interval 0.7–1.0)) (Stern and Lange, 1988). The psoralen plus UVA clinical trial patients, however, are not representative of the US population (e.g., selection bias), and the problem is compounded by the fact that CV mortality rates vary widely (by twofold or greater) across the United States (Labarthe, 1998; Rothman *et al*., 2008). In sum, non-population-based studies that do not have appropriate internal controls can be difficult to interpret.

In contrast, modern epidemiological approaches using population-based methods, which minimize bias and enhance generalizability, have found similar point estimates for the adjusted relative risk of coronary heart events reported by Wakkee *et al*. (hospitalization for IHD), Brauchli (MI), and Gelfand (MI) in psoriasis patients overall (Rothman and Greenland, 1998; Gelfand *et al*., 2006; Brauchli *et al*., 2009). Moreover, as shown by Brauchli *et al*. (2009) and our group (Gelfand *et al*., 2006), the point estimate of the adjusted relative risk of MI in severe psoriasis (based on treatment patterns) is clinically important and exceeds or is similar to the relative risk of MI conferred by major CV risk factors such hypertension, diabetes, and hyperlipidemia. To put this in perspective, the annual risk of a patient with severe psoriasis (based on treatment history) who is in his or her 40s having an MI that is attributable to psoriasis and not to traditional CV risk factors is estimated to be about eight times greater than that patient's risk of developing a melanoma (Gelfand *et al*., 2006; SEER, 2009).

Other investigators, using varying approaches and populations, have recently shown that severe psoriasis is an independent risk factor for atherosclerotic CV disease as defined by outcomes such as database-derived codes, imaging of coronary and carotid arteries, and measurements of endothelial function and arterial stiffness (Ludwig *et al*., 2007; Balci *et al*. 2008; El-Mongy *et al*., 2009; Gisondi *et al*., 2009; Gladman *et al*., 2009; Prodanovich *et al*., 2009). Wakkee *et al*. (2010) note that information bias (e.g., psoriasis patients may be screened more carefully for CV disease) may explain the positive associations; however, this is unlikely. First, in our studies, analyses limited to patients seen regularly by a general practitioner had minimal impact on the point estimates (Gelfand *et al*., 2006, 2009). Wakkee *et al*. adjusted for this potential bias by including the total number of hospitalizations (except for CV diseases) in the 6 months before cohort entry, in addition to adjusting for prescriptions for hypertension, hyperlipidemia, and diabetes. Although adjusting for prior health care utilization did not appear to meaningfully confound the association (e.g., the point estimates changed by less than 10%), it is important to note that this approach may not be appropriate for assessing information bias, because prior use of health

care services could be in the causal pathway of the association. For example, diabetes is associated with higher use of health care utilization; however, diabetes is still a risk factor for MI and adjusting for prior health care utilization is only likely to falsely attenuate this association. Second, MI is a relatively hard end point, with our results extending to CV mortality as well, and the magnitude of association of severe psoriasis with MI and CV mortality is similar to or exceeds that of the association of traditional major CV risk factors (Mehta *et al.,* 2009). It seems unlikely that general practitioners look more carefully for MI in psoriasis patients than in patients with diabetes and hypertension, and CV mortality would be robust to observation bias. Furthermore, other studies that have used diagnostic testing in psoriasis and control patients (e.g., coronary artery computed tomography scans) would not be subject to detection bias of the outcome, and they have similarly found psoriasis to be an independent risk factor for CVD (Ludwig *et al*., 2007; Balci *et al*., 2008; El-Mongy *et al*., 2009; Gisondi *et al*., 2009).

Wakkee and colleagues (2010) also raise the important point that incompletely measured or unknown confounders can explain the associations we and others have observed. This possibility is difficult to exclude, but it appears less likely, because several studies that have looked at CV disease in small cross-sectional studies using well-defined cases and controls have confirmed the independent association, even when tightly controlling for confounding through direct measurement of risk factors (Ludwig *et al*., 2007; Balci *et al*., 2008; El-Mongy *et al*., 2009; Gisondi *et al*., 2009). Moreover, we have shown in studies of stroke and CV mortality that an unknown confounder would need to be common in the general population (20% prevalence), be strongly associated with psoriasis (odds ratio (OR) of 2.7), and have a stronger association with CV mortality (OR of 6.5) or stroke (OR of 4.3) than traditional CV risk factors to nullify our results (Gelfand *et al*., 2009; Mehta *et al*., 2009).

Despite the numerous recent publications investigating psoriasis and CV risk, fundamental questions remain unanswered. In particular, we do not know what degree of psoriasis severity (e.g., measured by body surface area) and duration are necessary to meaningfully increase CV risk. We also do not know whether successful psoriasis treatment lowers CV risk and mortality (Gelfand, 2007; Gelfand *et al*., 2007). Until more research is done, the basic public health message remains the same. Patients with psoriasis, especially when disease is moderate to severe, should be educated about a potentially increased risk for CV disease and undergo appropriate medical evaluation and treatment of modifiable risk factors (Friedewald *et al*., 2008; Kimball *et al*., 2008; Bairey Merz *et al*., 2009).

CONFLICT OF INTEREST

JMG has been an investigator (I) and/or consultant (C) for Amgen (I, C), Abbott (I, C), Astellas (C), Centocor (I, C), Pfizer (C), Celgene (C), and Genentech (I, C). RSA and NNM state no conflict of interest.

ACKNOWLEDGMENTS

This commentary was supported by grants from the NHLBI (RO1HL089744 to JMG and K23HL97151 to NNM), the NIAMS (F32AR056799 to RSA and RC1AR058204 to JMG), and the American Skin Association (to RSA).

REFERENCES

Bairey Merz CN, Alberts MJ, Balady GJ *et al*. (2009) ACCF/AHA/ACP 2009 competence and training statement: a curriculum on prevention of cardiovascular disease: a report of the American College of Cardiology Foundation/American Heart Association/American College of Physicians Task Force on Competence and Training (Writing Committee to Develop a Competence and Training Statement on Prevention of Cardiovascular Disease): developed in collaboration with the American Academy of Neurology; American Association of Cardiovascular and Pulmonary Rehabilitation; American College of Preventive Medicine; American College of Sports Medicine; American Diabetes Association; American Society of Hypertension; Association of Black Cardiologists; Centers for Disease Control and Prevention; National Heart, Lung, and Blood Institute; National Lipid Association; and Preventive Cardiovascular Nurses Association. *J Am Coll Cardiol* 54:1336–63

Balci D, Balci A, Karazincir S *et al*. (2009) Increased carotid artery intima-media thickness and impaired endothelial function in psoriasis. *J Eur Acad Dermatol Venereol* 23:1–6

Brauchli YB, Jick SS, Miret M *et al*. (2009) Psoriasis and risk of incident myocardial infarction, stroke or transient ischaemic attack: an inception cohort study with a nested case–control analysis. *Br J Dermatol* 160:1048–56

El-Mongy S, Fathy H, Abdelaziz A *et al*. (2009) Subclinical atherosclerosis in patients with chronic psoriasis: a potential association. *J Eur Acad Dermatol Venereol*; e-pub ahead of print 2 November 2009

Friedewald VE, Cather JC, Gelfand JM *et al*. (2008) AJC editor's consensus: psoriasis and coronary artery disease. *Am J Cardiol* 102:1631–43

Gelber RP, Gaziano JM, Orav EJ *et al*. (2008) Measures of obesity and cardiovascular risk among men and women. *J Am Coll Cardiol* 52:605–15

Gelfand JM (2007) Long-term treatment for severe psoriasis: we're halfway there, with a long way to go. *Arch Dermatol* 143:1191–3

Gelfand JM, Neimann AL, Shin DB *et al*. (2006) Risk of myocardial infarction in patients with psoriasis. *JAMA* 296:1735–41

Gelfand JM,. Troxel AB, Lewis JD *et al*. (2007) The risk of mortality in patients with psoriasis: results from a population-based study. *Arch Dermatol* 143:1493–9

Gelfand JM, Dommasch ED, Shin DB *et al*. (2009) The risk of stroke in patients with psoriasis. *J Invest Dermatol* 129:2411–8

Gisondi P, Fantin F, Del Giglio M *et al*. (2009) Chronic plaque psoriasis is associated with increased arterial stiffness. *Dermatology* 218:110–3

Gladman DD, Ang M, Su L *et al*. (2009) Cardiovascular morbidity in psoriatic arthritis. *Ann Rheum Dis* 68:1131–5

Hammad TA, McAdams MA, Feight A *et al*. (2008) Determining the predictive value of Read/OXMIS codes to identify incident acute myocardial infarction in the General Practice Research Database. *Pharmacoepidemiol Drug Saf* 17:1197–201

Kimball AB, Gladman D, Gelfand JM *et al*. (2008) National Psoriasis Foundation clinical consensus on psoriasis comorbidities and recommendations for screening. *J Am Acad Dermatol* 58:1031–42

Kurd SK, Gelfand JM (2009) The prevalence of previously diagnosed and undiagnosed psoriasis in US adults: results from NHANES 2003–2004. *J Am Acad Dermatol* 60:218–24

Labarthe DR (1998) Coronary heart disease. In: Labarthe DR (ed) *Epidemiology and Prevention of Cardiovascular Diseases*. Aspen: Gaithersburg, MD, 54.

Ludwig RJ, Herzog C, Rostock A *et al*. (2007) Psoriasis: a possible risk factor for development of coronary artery calcification. *Br J Dermatol* 156:271–6

Mallbris L, Akre O, Granath F *et al*. (2004) Increased risk for cardiovascular mortality in psoriasis inpatients but not in outpatients. *Eur J Epidemiol* 19:225–30

McDonald CJ (1989) Cardiovascular disease in psoriasis. *J Invest Dermatol* 92:646–7

Mehta N, Azfar R, Shin D *et al*. (2009). Patients with severe psoriasis are at increased risk of cardiovascular mortality: cohort study using the General Practice Research Database. *Eur Heart J*; e-pub ahead of print 27 December 2009

Meier CR, Jick SS, Derby LE *et al*. (1998) Acute respiratory-tract infections and risk of first-time acute myocardial infarction. *Lancet* 351:1467–71

Neimann AL, Shin DB, Wang X *et al*. (2006) Prevalence of cardiovascular risk factors in patients with psoriasis. *J Am Acad Dermatol* 55:829–35

Prodanovich S, Kirsner RS, Kravetz JD *et al*. (2009) Association of psoriasis with coronary artery, cerebrovascular, and peripheral vascular diseases and mortality. *Arch Dermatol* 145:700–3

Rawson N, D'Arcy C (1998) Assessing the validity of diagnostic information in administrative health care utilization data: experience in Saskatchewan. *Pharmacoepidemiol Drug Saf* 7:389–98

Rothman K, Greenland S (1998) *Modern Epidemiology*, 2nd edn. Lippincott–Raven: Philadelphia, PA

Rothman KJ, Greenland S, Lash TL (2008) *Modern Epidemiology*, 3rd edn. Lippincott Williams & Wilkins: Philadelphia, PA

SEER (Surveillance Epidemiology and End Results), National Cancer Institute. Age-Specific (Crude) SEER Incidence Rates by Cancer Site; All Ages, All Races, Both Sexes, 1992–2006 <http://seer.cancer.gov/faststats/selections.php?run&output=2&data=1&statistic=3&year=200902&race=1&sex=1&age=1&series=cancer&cancer=53#Output>. Accessed 4 November 2009.

Stern RS, Lange R (1988) Cardiovascular disease, cancer, and cause of death in patients with psoriasis: 10 years prospective experience in a cohort of 1,380 patients. *J Invest Dermatol* 91:197–201

Stern RS, Nijsten T, Feldman SR *et al*. (2004) Psoriasis is common, carries a substantial burden even when not extensive, and is associated with widespread treatment dissatisfaction. *J Investig Dermatol Symp Proc* 9:136–9

Strom, BL (2005). Overview of automated databases in pharmacoepidemiology. In: Strom, BL (ed). *Pharmacoepidemiology*. Wiley: Sussex, UK. pp. 219–222

von Elm E, Altman DG, Egger M *et al*. (2007) The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies. *Lancet* 370:1453–7

Wakkee M, Herings RMC, Nijsten T (2010) Psoriasis may not be an independent risk factor for acute ischemic heart disease hospitalizations: results of a large population-based Dutch cohort. *J Invest Dermatol* 130:962–7

Wilson PW, D'Agostino RB, Levy D *et al*. (1998) Prediction of coronary heart disease using risk factor categories. *Circulation* 97:1837–47

See related article on pg 1116

Epigenetic Causes of Apoptosis Resistance in Cutaneous T-Cell Lymphomas

Emmanuel Contassot[1] and Lars E. French[1]

In cutaneous T-cell lymphomas (CTCLs) defects in Fas-mediated apoptosis have been suggested to be involved in disease pathogenesis. Decreased or absent Fas expression has been reported in a significant proportion of CTCL patients, but the molecular mechanisms of such impaired Fas expression have hardly been investigated to date. In this issue, Jones *et al.* show that defective Fas expression is attributable to positional methylation of the *Fas* gene.

Journal of Investigative Dermatology (2010) **130**, 922–924. doi:10.1038/jid.2009.427

Cutaneous T-cell lymphomas (CTCLs) are a heterogeneous group of non-Hodgkin's lymphomas characterized by the clonal proliferation of skin homing T cells. The most common CTCLs are mycosis fungoides (MF) and Sézary syndrome (SzS), an aggressive leukemic variant of MF. The tumor cells in MF and SzS exhibit a T helper type 2 (Th2) cytokine profile that contributes to associated immunosuppression. Biologic response modifiers such as IFN-α, IFN-γ, and IL-12, which stimulate T helper 1 responses, have significant therapeutic effects in SzS.

Appropriate Fas-mediated cell death is crucial for T-cell homeostasis. The elimination of activated T cells proceeds via activation-induced cell death (AICD), a process that is dependent on Fas signaling and subsequent apoptosis. In the absence of adequately controlled AICD, T cells are likely to accumulate. In both mice and humans, Fas gene mutations leading to defective Fas signaling result in lymphoproliferative disorders as a consequence of lymphocyte accumulation (Rieux-Laucat *et al.*, 1995). Because in certain types of CTCL (MF, SzS) tumor cells have been demonstrated to be long-lived, activated $CD4^+$ cells, defects in Fas-mediated apoptosis have recently been suggested to play a role in the accumulation of tumor T cells that occurs in each disease.

Defective Fas signaling has been implicated in the resistance to apoptosis induced by chemotherapeutic drugs. Furthermore, the lack of functional Fas signaling allows tumor cells to escape immune surveillance, facilitating disease progression. Several mechanisms contributing to Fas signaling defects in cancer have been described, including suppressed Fas expression at mRNA and protein levels (Bullani *et al.*, 2002; Petak *et al.*, 2003). Epigenetic silencing of the *Fas* gene promoter has been shown to be regulated by Ras (Gazin *et al.*, 2007). Furthermore, mutations or deletions in Fas have been found to cause autoimmune lymphoproliferative syndromes in both mice and humans (Rieux-Laucat *et al.*, 1995). Finally, the Fas signaling pathway can be modulated by intracellular apoptosis inhibitors such as cellular FLICE-like inhibitory protein and Bcl-2 family members.

Decreased expression of Fas on peripheral blood $CD4^+$ T lymphocytes in MF and SzS was first reported in 2000 (Dereure *et al.*, 2000; Zoi-Toli *et al.*, 2000). More recently, we (Contassot *et al.*, 2008) and others (Braun *et al.*, 2007; Wu *et al.*, 2009) have reported that a decrease, and sometimes a complete loss, of Fas expression is a relatively frequent event in lymphocytes from patients with SzS. In our cohort of 16 SzS patients, 9 were resistant to FasL, which in 4 patients was caused by a loss of Fas expression. In MF, resistance to FasL-induced apoptosis has already been attributed to mutations in the *Fas* gene (Dereure *et al.*, 2002; Nagasawa *et al.*, 2004) and to the

[1]*Department of Dermatology, University Hospital, Zurich, Switzerland*

Correspondence: Lars E. French, Department of Dermatology, University Hospital, Gloriastrasse 31, 8091 Zurich, Switzerland. E-mail: lars.french@usz.ch