
# Abstracts from the 5th International Dermato-Epidemiology Association (IDEA) Congress

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## 1

### Lack of relation between objective and subjective itch scores in a cohort study

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We have previously shown that patient reported itch correlates poorly with objective measures of scratch and movement. (Bringhurst C, Waterston K, Schofield O *et al*. Measurement of itch using actigraphy in paediatric and adult populations. *J. Am. Acad. Dermatol.* 2004; **51**:893–8.) A criticism of this approach is that it attempts to correlate measures between different persons—it is still possible that each individual can assess their own symptoms over time. The present study set out to examine this hypothesis by looking at individual scores—subjective and objective—in a cohort study.

20 adults with eczema were recruited: eleven males and nine females, median age 42 years (range 16–67 years.) The subjects wore the digital accelerometer on the wrist every night for 42 nights. The total acceleration, as accessed from the raw accelerometer download for 1–5am, was used as the objective itch score. These monitoring hours were chosen in order to minimize error caused by generalized movement (as opposed to scratch-related movement.) Subjects completed daily visual analogue scores of itch and these were compared to the accelerometer score for the same period.

A lack of correlation between the objective digital accelerometer score and the visual analogue scale score for itch of the corresponding period was demonstrated: median rho = 0.09 (range −0.38–0.72) median $P = 0.52$ (range 0.007–0.9583.) Only one subject's scores correlated more strongly than rho = 0.26, and this was the only ''significant'' ($P = 0.007$) correlation coefficient.

We conclude that in this patient group, subjects were not able to accurately access and communicate their own itch symptoms and severity. Inability to access one's own symptoms over time may be a more general issue however and such cognitive limitations may vitiate the use of some patients' measures in disease management.

## 2

### Perceptions and perspectives of psoriasis extent

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We understand little of how people assess extent of disease, for example previous work using two-tone drawings of schematic outlines suggested systematic differences between doctors, nurses and others in the assessment of disease extent in psoriasis (Tiling-Grosse S and Rees J. Assessment of area of involvement in skin disease using schematic figure outlines. Br. J. Dermatol. 1993: **128**: 69–74.) A major stumbling block remains the lack of a method to realistically model disease extent using graphical display that can be used experimentally. We describe a novel technology to meet this need and present some date on its use.

A series of computer images comprising nine psoriasis severities (each with views of front, back, half front and half back) were designed were designed using the 3D character modelling package Poser and the imaging software Adobe Photoshop. Psoriasis coverage ranged from 1.95 to 62.00%. 55 subjects were recruited (12 dermatology doctors, 8 dermatology nurses, 5 general nurses, 10 medical students, 5 administrative staff and 20 psoriasis patients.) The images were presented in random order and each subject score every image out of ten (ten being ''worst disease.'') Subjects also picked one image per pose for mild, moderate and severe psoriasis.

As expected, all groups of subjects' mean assessed severity scores correlated with the actual disease coverage (actual pixel count): r 0.96–0.99. Linear regression of subject's severity assessment on actual disease coverage: median gradient 0.14 (range 0.12–0.15, SE slope ±0.008; median intercept 1.86 (range 1.59–2.17); analysis of variance for regression $P < 0.0001$; r square 0.93–0.98. Median scores for mild, moderate and severe disease were similar across the groups, however the range was larger and exhibited a lower threshold for patients selecting a model for severe disease (mean range patient: 5.5 (SD ± 1.29) *versus* mean range dermatology staff: 2.25 (SD ± 0.64), students *t*-test $P = 0.04$.)

The results are intriguing as, unlike other human perceptions, which usually show a logarithmic relationship, in this group, perception of extent was processed linearly when accessed using these realistic but computer generated images. The study also demonstrates that use of a simple scale has produced consistent evaluation of extent across groups despite the groups' presumed different perspectives on the disease, suggesting that this method may be preferable to the more abstract consideration of ''percentage involvement'' of disease coverage.

## 3

### Psoriasis appears not to be directly related with using cardiovascular and antidiabetic drugs

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Several studies have investigated the association between psoriasis and cardiovascular disease with conflicting results. These differences are probably due to different study designs, selection procedures, outcomes, follow-up time and available information on confounders. The objective of this comparison study was to investigate the association between psoriasis and prevalent use of cardiovascular and antidiabetic drugs.

Data were extracted between 1998 and 2006 from a pharmacy and hospital record database in the Netherlands. Psoriasis cases were selected using an algorithm of hospitalization and drug dispensing records specific for psoriasis. Cases were ⩾18 years and had a minimal follow-up of 6 months before and 5 years after the diagnosis of psoriasis in the database, which was considered as the index date. Up to 2 controls without psoriasis were randomly selected from this database and matched for gender, age and time period. Analysis were performed using multivariate linear regression, which included a variable comprising the unique number of total prescriptions in 6 months before index date as proxy for health care consumption.

In total 9,804 cases and 15,288 controls were included. Of all psoriasis cases, 10% used systemic anti-psoriatic therapies and were classified as moderate to severe psoriasis. The 5-year prevalence of cardiovascular drugs including antihypertensives, anticoagulant and antiplatelet agents, digoxin, nitrates, lipid lowering drugs and also antidiabetics showed a significant trend ($P < 0.05$) comparing controls to mild and moderate to severe cases to controls. After adjusting for number of unique drugs used, psoriasis was no longer associated with any of these major drug classes. This was confirmed after stratification for psoriasis severity, except that patients with more severe psoriasis used less beta-blockers (adjusted odds ratio = 0.76, 95% confidence interval = 0.61–0.95).

In contrast to the outcome of most other studies, did this study not provide evidence for a direct relationship between psoriasis and cardiovascular disease. After adjusting for unique prescriptions in 6 months before the index date, as a proxy for health care seeking behaviour as well as for the presence of obesity (by lipid lowering drugs) and diabetes mellitus (by antidiabetics), psoriasis was no longer significantly associated with using cardiovascular and antidiabetic drugs. This study confirms the complexity of the association between psoriasis and cardiovascular disease and suggests that health care consumption is an important confounder.

## 4

### Development of a disease-specific instrument for evaluation of quality of life in patients with acute old world cutaneous leishmaniasis in adult Iranian patients: a study protocol

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Cutaneous leishmaniasis is prevalent in 88 countries including 77 developing ones. Globally, at least tens of millions of people are at risk of acquiring this disease and it is estimated that each year 1–1.5 million new cases occur. Patients' perspective about their disease is of paramount importance in both medicine and public health and assessment of their quality of life (QoL) is one way to gain knowledge about their point of view. It has been shown that acute Old World cutaneous leishmaniasis (AOWCL) can adversely affect QoL of patients in several ways.

Due to some characteristics of this disease, generic or dermatology-specific QoL instruments might fall short to assess quality of life in AOWCL patients appropriately. To measure quality of life of these patients, development of a disease-specific QoL instrument is rational.

The aim of this thesis is to write a protocol for developing a disease specific instrument to evaluate the quality of life in adult Iranian patients with AOWCL.

According to this protocol a qualitative research will be conducted to understand patients' perspective about the impact of AOWCL on their quality of life. Adult patients from four endemic areas for cutaneous leishmaniasis due to *Leishmania tropica* and *L. major* and one referral center in Tehran will be recruited. A purposive sampling method with maximum variation will be used. In-depth interviews and focus group discussions with volunteer patients will be conducted and collected data will be interpreted using the Grounded Theory. After expert checking for content validity of the developed instrument and completion of a pilot study it will be further assessed for psychometric properties through a survey.

After implementation of this protocol into the research, a needs-based disease-specific questionnaire for evaluation of quality of life in adult Iranian patients with AOWCL will be developed. Hopefully this instrument will be validated and used later in other communities suffering from this disease.

Development of an instrument for evaluation of QoL in AOWCL patients has many advantages from provision of patients' perspective about their disease which can promote the health care delivery to these patients to the possibility of using the developed instrument in research such as an outcome measure in clinical trials.

# 5

## Do adolescents with skin disease have specific quality of life issues?

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Adolescence is a period of life with its own unique characteristics.[1] The effect on quality of life (QoL) of individuals with skin disease has been widely documented, but currently there is a lack of QoL data arising directly from adolescents with skin conditions.
To provide an in-depth understanding of the impact on different aspects of adolescents' QoL which could be affected by suffering from a skin disease.
A convenience sample of patients between 12 and 18 years of age, attending the dermatology out-patient clinic of a secondary referral centre, with a diagnosed skin disease were invited to participate. A series of semi-structured qualitative interviews were conducted with the study participants. They were invited to talk in detail about all the ways their lives had been affected by their skin disease. Interviews were transcribed verbatim. The interviewer used a series of open-ended questions and encouraged the study participants to give examples, to understand the reasoning behind answers they gave.
Thirty two adolescents (M = 10, F = 22) with a mean age of 15.7 years (range = 12–18 years) participated in interviews. Patients suffered from one of eight different skin diseases, with the most common being acne (67%), eczema (12%) and psoriasis (9%). 28 QoL aspects adversely affected by skin diseases were identified from the interviews which were grouped under six main QoL domains- Psychological Impact (91% of patients), Physical Impact (81%), Social Impact (81%), Impact on Lifestyle (63%), Need for Support (41%) and Education and Employment (34%). Commonly mentioned QoL aspects included impact on swimming with patients feeling self-conscious about exposing skin, and future aspirations, with patients changing their desired career paths as a result of their skin condition. The number of QoL aspects affected in each individual varied between 1 and 23 with the mean of 8.1.
The results of this study revealed the extent and nature of the impact of skin diseases on adolescents' QoL. The themes emerged in a different pattern to those reported in the literature about adults and children, highlighting issues specific to adolescents and the need to develop QoL measures specific for this particular age group.

[1] Frisen A (2007) Measuring health-related quality of life in adolescence. *Acta Paediatrica* 96:963–8.

# 6

## Development of questions concerning eczema in pre-school children – a qualitative study

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Our aims were to asses how questions were perceived by parents in order to optimize identification of eczema in children from the age of two months for the Swedish Environmental Longitudinal Mother-child Asthma and allergy (SELMA) study.
Adopted questions were developed based on ISAAC and the UK diagnostic criteria for eczema 1. Nurses in child preventive care were asked to invite children aged two months to six years with or without eczema. A qualitative study with a semi-structured one hour interview and examination according to Hanifin and Rajka's criteria was performed. Parents answered a questionnaire prior to the interviews and examinations done by the main author. The interview was put in writing, approved by the responders and analysed according to content analysis 2. Interpretations were compared against the original data for internal corroboration or disconfirmation. Analysis is focused on whether the questionnaire was answerable and if it could be improved.
In total 60 children participated, 27 girls and 33 boys, 35 with and 25 without eczema. Clinical signs and self-reported symptoms mostly concurred; if they differed the parents did not overestimate symptoms. Parents considered that questions about symptoms were not difficult to answer. The parents had difficulties with concepts like diseases and ''family''. The parents regarded the differentiation between normal, dry and eczema skin to be complicated. Knowledge about eczema was stated to come from relatives and medical personal, not from internet or newspapers. Parents to children with eczema were worried, some expressed guilt or economical strain.
Most questionnaires are based on clinical experience and collegial discussions but it is also important to consider the layman view. This study showed that concepts are difficult to use, while symptoms may be more reliable even in the very young. Selection bias and recall bias can influence the results. Further quantitative analysis of the questions will be done in a future study.

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[2] Patton MQ (2002) *Qualitative Research & Evaluation Methods*. 3rd ed. London: SAGE.

# 7

## The UK dermatology clinical trials network – answering important clinical questions that other organisations do not reach

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Skin diseases affect 25% of the population, and are the 4th most common reason why people go to their GP, yet there are large gaps in knowledge about their causes and treatment. The UK Dermatology Clinical Trials Network began in 2002 with the aim of conducting high quality, non-commercial, multi-centre clinical trials that answer questions about treatment of skin diseases that are important to clinicians *and* patients. The Network comprises dermatologists, dermatology nurses, health services researchers and patients. It is led by an Executive and a Steering Group and is chaired by Professor Hywel Williams.
Trial suggestions are submitted by Network members as a vignette which is then put through a pre-defined development process based on a traffic light system: Red = on hold; Amber = in development; Green = ready for submission to funding bodies.
There are seventeen studies in the Network portfolio; one published study (cellulitis), six ongoing studies funded by NIHR partners and medical charities (dealing with basal cell carcinoma, eczema, bullous pemphigoid, cellulitis and pyoderma gangrenosum) and a further ten studies in a range of skin diseases at various stages of the traffic light development process.
Two of the trials deal with less common conditions; the bullous pemphigoid (BLISTER) study and the pyoderma gangrenosum (STOP-GAP) study. Both these studies will seek to recruit patients in centres outside of the UK.
The Network Co-ordinating Centre is situated within the Centre of Evidence Based Dermatology (CEBD) at the University of Nottingham. The research strategy of the CEBD is based on three cogs representing a cycle of generation, production and dissemination: the Cochrane Skin Group summarises current knowledge, the UK Dermatology Clinical Trials Network fills gaps in knowledge, and the Skin Disorders Specialist Library disseminates results.
The structures and processes employed by the UK DCTN might be helpful for other countries outside the UK to develop similar strategies that could become part of a global federation of dermatology trial networks.

# 8

## Warts: cryotherapy, salicylic acid or expectantly awaiting? – a randomised controlled trial

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The 2006 Cochrane review (Gibbs S, Harvey I. Topical treatments for cutaneous warts. *Cochrane Database of Syst Rev* 2006, Issue 3. Art. No.: CD001781) concluded that there is a considerable lack of evidence on which to base the rational use of topical treatments and that the most urgent need is for a trial to compare salicylic acid, cryotherapy and expectantly awaiting. We performed a pragmatic randomised-controlled intervention trial to investigate the effectiveness of cryotherapy, salicylic acid and expectantly awaiting for treatment of hand and plantar warts in general practice.
Within 50 general practices, visiting patients aged 4 years and over with warts were invited to participate. After informed consent, participants were stratified for wart location (hand *versus* plantar), allocated in three treatment groups (liquid nitrogen cryotherapy, topical salicylic acid or expectantly awaiting policy) and received standardised instructions. Outcomes were cure rate (percentage of participants with all warts cured), adverse effects and participant treatment satisfaction, and were measured by research nurses after 4, 13 and 26 weeks of follow-up.
During 7 months 250 participants were enrolled, 40% male, median age 13 (IQR 7–35) and median warts per participant 2 (IQR 1–4). 10 participants (4%) were lost to follow-up. Hand warts ($n = 115$): At 13 weeks, for cryotherapy the cure rate was 47% (CI 33–63) compared to 15% (CI 7–30) for salicylic acid and 8% (CI 3–21%) for expectant awaiting (Chi-square, d.f. = 2, $P = < 0.001$). Plantar warts ($n = 125$): Cure rates were 29% (CI 17–45), 33% (CI 21–48) and 23% (CI 13–37) respectively (Chi-square, d.f. = 2, $P = 0.587$). 81% of cryotherapy participants mentioned pain as adverse effect and 51% blistering, while 61% of salicylic acid patients mentioned skin irritation. Participant treatment satisfaction was higher in cryotherapy than in salicylic acid (Mann–Whitney, d.f. = 1, $P = 0.030$).
Cryotherapy is the most effective treatment of hand warts. For plantar warts neither cryotherapy nor topical salicylic acid is more effective than expectantly awaiting. Although cryotherapy causes more adverse effects than salicylic acid, therapy satisfaction is highest in cryotherapy participants. Funded by the Dutch College of General Practitioners (ZonMW).

# 9

## Clinical decision-making in dermatology: the role of clinical and non clinical factors

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Clinical decision-making is a complex process. It involves interaction of various clinical and non-clinical factors. The literature regarding this subject in non-dermatological specialities is expanding.[1] However, in dermatology little is known about this process.[2]
The aim of this study was to explore common management decisions made in dermatology outpatient clinics and the main influences on these decisions.
The investigator (FMH) observed the consultations of patients at a university hospital dermatology outpatient clinic. Verbatim notes were taken of the conversations between the clinicians and the patients. Inferences were drawn regarding different management decisions taken during these consultations and the possible factors influencing these decisions.
217 consultations (consultants = 66.8%, specialist registrars = 25.8%, clinical lecturers = 4.1%, clinical nurse specialists = 3.2%) were observed. The mean duration of the consultations was 11 minutes (SD = 6.99) with a significant difference between the consultation times for different clinicians ($P<0.0001$). The most frequently made decisions included: carrying out laboratory investigations (28.6%), starting new topical treatment (22.1%), discharge to primary care (17.5%), renewal of systemic medication (16.1%), and renewal of topical medication (12%). A total of 19 clinical and non-clinical factors influencing these decisions were identified. More frequent clinical factors included: clinical guidelines (32.7%), deterioration of skin condition (21.2%), improvement of skin condition (20.7%), and side effects of medications (10.6%). More frequent non-clinical factors included: patient's treatment preferences (9.7%), patient's concerns (6.9%), quality of life issues (6.5%), patient's time commitment (6.5%), and treatment compliance problems (4.6%).
In this study we have identified the types of management decisions taken in dermatology and the main influences on these decisions. Studying the link between clinical decisions and the influences on these decisions will contribute to better understanding of decision making processes in dermatology, on which better health outcomes depend.

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[2] Katugampola RP, Hongbo Y, Finlay AY (2005) Clinical management decisions are related to the impact of psoriasis on patient-rated quality of life. *Br J Dermatol* 152:1256–62.

# 10

## Basal cell carcinoma more common among high socio-economic status: is there an association with localization, age and gender?

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Basal Cell Carcinoma (BCC) is the most common malignancy in humans. BCC- associated mortality is extremely rare, but BCCs often cause functional and cosmetic morbidity and costs because of their high prevalence.[1] Incidence rates are especially increasing for BCCs located on the trunk and extremities in young and middle aged people.[1] From malignant melanoma (MM), another type of skin cancer that seems to be similar in etiology to BCC, we know that there is a strong gradient in socio-economic status (SES), melanoma being more common among the higher SES groups.[2]
The primary objective was to investigate distribution of SES in patients with a BCC, stratifying for gender, age and localization in a large population-based cohort of BCC patients. Data from the Dutch Eindhoven Cancer Registry were used. All patients newly diagnosed with a first primary basal cell carcinoma from 1990–2004 ($N=26,300$), were stratified by gender, age (< and > = 65 yrs), period of diagnosis, SES category and BCC topography. Age-standardized BCC incidence rates were calculated for the year 2004 by SES category and localization. Ordinal regression was used to assess changes with time in the proportion of BCC patients, by gender, age and SES. A positive relationship between SES and BCC incidence was found for men only in all age groups, which remained after stratification for localization. Young females (<65 yrs) showed higher rates for BCCs on trunk and extremities in all SES categories than males, especially for truncal BCCs in the high SES category. A consistent positive association between SES and BCC incidence was found among males only. An explanation might be that in males recreational sun exposure is a more important way of receiving UV radiation, whereas women may have additional other tanning habits. In younger females a positive trend with SES seems to develop for BCCs in the intermittently exposed body sites, which could be due to changes in (bathing) clothing, allowing more body parts to be sun exposed.

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[2] Aase A, Bentham G (1996) Gender, geography and socio-economic status in the diffusion of malignant melanoma risk. *Soc Sci Med* 2(12):1621–37.

# 11

## Quality of life and health-state utilities in psoriasis patients at the national skin centre, Singapore

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Psoriasis is a chronic skin disease affecting a significant proportion of our Singaporean population. Patients experience a wide range of symptoms which affect their lives. It is important for dermatologists to use Quality of Life (QOL) measurements to monitor the progress of psoriasis patients, as the QOL of such patients may be underestimated by objective assessments of clinical severity.[1]
In our study, we measured the quality of life of psoriasis patients using a general scale (SF-36),[2] a disease-specific scale (Psoriasis Disability Index – PDI) and a visual analogue scale. Two health-state utilities, namely the time trade-off and willingness to pay indices, were assessed as well. The PASI score, an objective assessment based on clinical examination, was also obtained.
From September 2007 to February 2008, we recruited 215 patients, of which 174 (80.9%) were from the Psoriasis or Phototherapy Clinic, and the rest from the General Clinic. 152 (70.6%) patients were male and 41 (29.4%) were female, comprising 71.6% Chinese, 14.4% Malays, 12.6% Indians and 1.4% Eurasians. The average age was 49.4 years. 155 (72.1%) of patients had monthly income of less than $2000. The mean duration of disease was 13.6 years, with chronic plaque psoriasis (91.6%) being the most common subtype. Arthropathy was present in almost a quarter (27.4%).
Hypertension, hyperlipidaemia and diabetes mellitus were the most commonly found co-morbidities, occurring in 31.6, 20.9 and 19.1% of patients respectively. Regarding treatment modalities, almost all the patients were on topical steroids, topical coal tar preparations and moisturizers. Other treatments received are as follows: methotrexate in 40.4% of patients, phototherapy 23.3%, acitretin 16.2%, cyclosporine 7.0 and 5.1% biologic agents.
The mean PASI score was 14.79 and the mean PDI 9.35. The SF-36 assessment showed the lowest scores for the energy/fatigue levels and the general health category in our group of psoriasis patients. The average time-trade off was 3.74 years of life. The patients were willing to give up 34% of their income/savings, on average, for an immediate cure for their condition. This study illustrates that psoriasis can significantly affect patients to the extent that they are willing to trade their years of life or income in search of a cure. This data will be of use to health care providers and research funding agencies when assessing the impact of psoriasis on the affected population.

**References:**

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[2] Sampogna F, Tabolli S *et al.* (2006) Measuring quality of life of patients with different clinical types of psoriasis using the SF-36. *British Journal of Dermatology* 154:844–9.

# 12

## Patients with an increased number of kidney grafts have a decreased risk to develop squamous-cell carcinoma after transplantation

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Kidney transplant recipients (KTR) are at increased risk of skin cancer, especially squamous cell carcinoma (SCC). Well-known risk factors for SCC are exposure to ultraviolet radiation and immunosuppressive drugs. The aim of this study was to estimate the influence of the number of transplantations on the risk of developing SCC in KTR. The more aggressive immunosuppressive regimen used to treat rejection could lead to an increased risk of SCC. On the other hand, the activated status of the immune response to alloantigens in rejecting patients may protect against the development of SCC.
In a cohort study consisting of 1,771 KTR who had received a kidney transplant between March 1966 and Jan 2006, we used Kaplan Meier and Cox proportional hazard analyses to calculate the cumulative incidence of SCC categorized according to the numbers of transplantations and to adjust for potential confounding factors. A total of 1,443 KTR received 1 transplantation, 251 received 2 transplantations and 77 received 3 to a maximum of 5 transplantations.
The cumulative incidence of SCCs in patients receiving 1 transplantation increased from 7% after 10 years to 21% after 20 years and 37% after 30 years. In recipients with 3 or more transplantations this incidence only increased from 0% after 10 years to 8% after 20 years and 11% after 30 years, which is significantly lower compared to patients with 1 transplantation ($P=0.003$). The hazard ratio of developing SCC after adjustment for sex and age was 0.37 (0.16;0.84) for patients receiving three or more kidney transplants compared with patients with only 1 transplantation.
We have found a 3-fold decreased risk of SCC with increasing numbers of transplantations. This observation indicates that KTR who repeatedly reject their kidney are -to a certain extent- protected against the development of SCC. Apparently, in these patients the increased risk of SCC induced by the more aggressive immunosuppressive regimen is completely compensated and overruled by the protective effect of the high state of immunologic responsiveness to alloantigens which may be associated with an effective (cross-reactive) immune response to SCC antigens.

# 13

## Paediatric dermatology: a study of the pattern of skin diseases among children attending Basra Maternity and Children's Hospital

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Skin diseases are common among children. However, only few epidemiological surveys are available in the literature. This study was conducted at the Basra Maternity and Children's Hospital to determine the spectrum and pattern of skin diseases in children attending the paediatric outpatient clinic at the hospital. The study was carried out between January 2002 and January 2004. The total number of children with skin disorders examined was 1,251. A number of them had more than one disorder, resulting in 1,274 skin disorders being recorded among the group. Infectious diseases and parasitic infestations were the most common (44.2%). Eczema/dermatitis constituted 39.0% followed by bacterial infection (13.6%), parasitic infestations (13.2%) viral infections (9.6%) and fungal infections (7.8%). The most common type of eczema in children was atopic dermatitis (12.5%). The most common disorder among infants was diaper dermatitis (31.3%), while in preschool and school age groups it was impetigo (13.0%) and pityriasis alba (11.2%) respectively.
These data may be useful in planning health care for children.

# 14

## Dermatoepidemiology: a household survey of the patterns of skin disorders in two urban areas in Basra, Iraq

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This is a cross-sectional study that investigates the patterns of skin disorders in two urban areas in Basra, Iraq. The areas were randomly selected and in each area all houses were visited. Consents were taken from the inhabitants and they were then asked if they had any skin disorder or problem. Health care provision was also determined. A doctor examined each inhabitant and a set of diagnostic criteria was applied. The data were analyzed statistically to reveal the prevalence and patterns of skin diseases in Basra and the types of health care provided This study is the first of its kind to discuss the epidemiology of skin diseases in Basra. Three hypotheses were tested:

(1) The prevalence of skin diseases is high in Iraq.
(2) Traditional health care is the common practice.
(3) A high percentage of patients do not seek medical advice.

The table below shows the relative prevalence of specific skin diseases in the two areas of Basra studied.

| Higher prevalence in area A | Higher prevalence in area B |
|---|---|
| Pityriasis alba | Infantile AD |
| Impetigo—(abscess, furuncle, carbuncle) | Warts Pityriasis V |
| Chicken pox | Alopecia A |
| Dermatophytes | Onychomycosis |
| Pediculosis –scabies | Vitiligo |
| Paronychia | Psoriasis |
| Urticaria & Erythema | Acne V |

Although skin diseases are common in Basra in that they occur in about 24% of the population, only a small proportion of those affected seek medical advice. The majority depend on herbal and traditional health care practice, as they consider their skin disorders trivial and not in need of conventional health care.

# 15

## Community-based participatory research in psoriasis

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Community-based participatory research (CBPR) is a newly emerging model of research that has been increasingly recognized as an effective methodology in adding relevance and value of research in primary health care and epidemiologic research (Jones L, Kenneth W. Strategies for academic and clinician engagement in community-participatory partnered research. *JAMA* 2007;297:407–410). We present a novel approach of research utilizing CBPR in dermatology. We will describe the structural organization of the research network and the steps involved in establishing a partnership among researchers, clinicians, and community members. Our Multidisciplinary Psoriasis Center brings together specialists from several disciplines, including dermatology, rheumatology, psychiatry, nutrition and nursing, which offers a comprehensive approach to the management of psoriasis. Researchers and educators from the center interface with the participating community sites, provide education and facilitate the development and growth of support groups. They work with community-based members to address community-relevant research priorities. Intake questionnaires have been administered to psoriasis patients in the multidisciplinary psoriasis center and in numerous dermatology and primary care clinics in communities throughout Northeast Ohio. A well-characterized database has been created which contains key demographic and clinical data on psoriasis patients. The database will facilitate basic science, translational, clinical, and outcomes research. The CBPR approach in psoriasis is the first reported model in dermatology, which can increase the rate of knowledge translation, shorten the path between research activity, adoption and dissemination of the results (Macaulay AC, Nutting PA. Moving the frontiers forward: incorporating community-based participatory research into practice-based research networks. *Ann Fam Med.* 2006;4:4–7).

# 16

## The burden of chronic pruritus is comparable to that of chronic pain using time trade-off utilities

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Utilities are measures of quality of life that represent the strength of an individual's preferences for a specific health state. Utilities, ranging from 0 to 1, are an approach to the measurement of disease burden, with a score closer to 0 signifying greater burden. Our objective was to compare the utilities for symptoms of chronic pruritus to chronic pain.
From June to May of 2008, adult patients with chronic pruritus or pain (>6 weeks), were recruited from the dermatology clinic, the Center for Pain Management, and the Spine Center at Emory University. Utilities were derived via a face-to-face interview using the time trade off method. *T*-test and chi-squared test were used to compare continuous and categorical variables between pruritus and pain cohorts. Linear regression was used to evaluate predictors of utility values.
Of the 73 subjects with pruritus, 55% were female, 72% were Caucasian, 72% were married, and the mean age was 55 (17) years. The 138 subjects with pain did not statistically significantly differ from the pruritus cohort in the above demographic factors. Subjects with chronic itch compared to pain had a higher mean (SD) utility for their symptom (0.874 (0.270) *vs* 0.767 (0.308), $P=0.02$, respectively). However, after controlling for symptom severity (as well as demographics and duration) in a linear regression, symptom type (pain or itch) did not significantly predict symptom utility score.
We have demonstrated that chronic pruritus has a significant impact on quality of life as measured by utilities and is comparable to the burden of chronic pain. Further studies are warranted to investigate utilities in patients with chronic pruritus.

# 17

## The comparison of ketoconazole 2% solution effect with ketoconazole 2% shampoo in treatment of seborrhoeic dermatitis

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Seborrhoeic dermatitis (SD) is a chronic and inflammatory skin disorder, affecting areas of the head and body where sebaceous glands are most prominent and active. The aetiology of SD is unknown, although hormones and the Malassezia spp. formerly known as Pityrosporum are thought to be involved in the development of the condition (Tajima M, Sugita T, Nishikawa A, Tsuboi R. Molecular analysis of Malassezia microflora in seborrheic dermatitis patients: comparison with other diseases and healthy subjects. J Invest Dermatol 2008 Feb; 128 (2):345–51), so some anti-fungal agents are also effective in treatment of SD (Borgers M, Degreef H. The role of ketoconazole in seborrheic dermatitis. Cutis 2007 Oct; 80 (4):359–63). In this study for the first time the effect of KCZ 2% solution compared with KCZ 2% shampoo on Iranian SD patients.
100 patients (60 males and 40 females with age between 12–65 years) were enrolled to determine the comparison of KCZ 2% solution and KCZ 2% shampoo. Solution and shampoo was given twice a day for 4 week. The patients were evaluated according to itching, burning, erythema, scaling and seborrhoea at the initial evaluation and every 2 weeks for 1 month. Each Severity index was on three scale: 1-mild (0–4), 2-moderate (5–8), 3-severe (9–12) on days 0, 14 and 28. The clinical response was graded as markedly mild, moderate and severe as scoring index.
Clinical improvement was evaluated (as markedly scoring index) in two groups at 0, 14 and 28 days. Scoring index varied from 3–11 in T0 and 1–8 in T14 and 1–8 in T28. There were statistically significant results between T0 and T14 and T28 in two groups ($P$-values $<0.0001$).
The comparison of the KCZ 2% solution and KCZ 2% shampoo revealed that the efficacy of KCZ 2% solution was greater than KCZ 2% shampoo for 4 weeks after the end of treatment. These data suggest that twice-daily ketoconazole solution is an effective treatment for SD and available alternative to the KCZ 2% shampoo.

# 18

## A population-based cohort study of childhood AD in Ishigaki Island

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To investigate the natural history of atopic dermatitis (AD) in children aged 5 years or under in Ishigaki Island, a population-based cohort study began in 2001. Ishigaki Island is a subtropical island in a southwestern district of Japan. Children in nursery schools were annually examined by dermatologists from 2001 to 2006. Prevalence of childhood AD in Ishigaki Island was lower than that of Japan's mainland. About 80% of children with AD experienced spontaneous regression during 5-year follow-up period, whereas incidence of AD in children was 4.6%/person year from 2001 to 2006. Serum levels of IgE and CCL17 (TARC) in children having persisting AD had higher levels of those in children whose AD had regressed and children without AD. Multivariate analyses revealed that past history of asthma and food allergy, high levels of total IgE, maternal allergic rhinitis and sibling's AD were significantly correlated with the development of AD in Ishigaki children.

# 19

## Family impact of cutaneous disease in the ectodermal dysplasias

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The ectodermal dysplasias (ED) are a complex, heritable group of syndromes with cutaneous manifestation including hypohidrosis, alopecia, and infections of the skin and nails. The objective of this study is to examine the family impact (FI) of cutaneous disease and determine what factors have an impact on family life.
From July to November 2007, children with ED and care providers were surveyed at national and regional conferences hosted by National Foundation for Ectodermal Dyslasias. Data regarding demographics, severity of hypohidrosis, scalp alopecia, and fingernail involvement (all measured by reliable 5 point likert scales), and the QOL of the ED child subject using the Child Dermatology Quality of Life Instrument (CDLQI)[1] were gathered. To measure FI, we utilized the Dermatitis Family Impact Questionnaire.[2] We used multiple linear regressions to determine the relationship between the above variables and FI. A $P$-value of $<0.05$ was considered statistically significant.
Of the 28 families surveyed, 75% of the surveys were completed by the mother and 64.3% of households consisted of married caregivers with a mean of 1.5 children per household. The mean (SD) age of the children with ED was 6.9 (4.1) years, 39.3% were female, 71.4% were Caucasian, and 46% had hypohidrotic ED. The respective mean (SD) severity scores for hypohidrosis, alopecia, and fingernail scores were 3.7 (1.4); 2.7 (1.2); and 2.3 (1.3) (max 5, higher score greater severity). Sixteen children were able to complete the CDLQI questionnaire reporting a mean (SD) total score of 4.2 (4.2), (max: 30, higher score greater impact). The mean (SD) family impact total score for family impact was 7.7 (7.4) (max: 30, higher score greater impact). Regression analyses demonstrates hypohidrosis affects QOL ($P=0.006$), as measured by the CDLQI, and both hypohidrosis ($P=0.002$) and fingernail involvement ($P=0.04$) have an influence on FI. Even after adjusting for QOL, hypohidrosis ($P=0.04$) continues to impact FI.
This pilot study demonstrates that QOL of the ED child is associated with the severity of hypohidrosis and fingernail disease. The severity of hypohidrosis impacts the FI even after controlling for QOL. We speculate that alopecia was not a significant factor because the CDLQI focuses more on functional QOL and may underestimate the emotional and symptomatic impact. While additional studies are needed to analyze reasons behind these observations, this study should guide the dermatologist for focus on care issues surrounding hypohidrosis and fingernail disease in an effort to improve QOL and family life of the ED child.

[1] Lewis-Jones MS *et al.* (1995) The Children's Dermatology Life Quality Index (CDLQI): initial validation and practical use. *Br J Dermatol* 132:942–9.
[2] Lawson V *et al.* (1998) The family impact of childhood atopic dermatitis: the Dermatitis Family Impact Questionnaire. *Br J Dermatol* 138:107–13.

# 20

## Benchmarks and obstacles to success as reported by academic dermatology faculty

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The objective of this study was to elucidate factors perceived by academic faculty to be barriers to a successful academic career in dermatology. From 2007–2008 an anonymous survey about personal characteristics and career development was mailed to faculty members of one academic dermatology department per state in the US. Free text answers about perceived benchmarks and obstacles to success were interpreted and categorized. We investigated differences between junior ($1–\leqslant 10$ years on staff) and senior ($>10$ years) faculty. Respondent characteristics were compared using the Student's $t$-test and the chi-square test. Statistical analyses were performed with SPSS 15.0.
Response rate was 37% (179/484). Junior ($n=86$) and senior ($n=93$) respondents had a mean (SD) age of 40.2 (7.3) and 54.7 (7.7) years, respectively, ($P<0.001$) and had spent a 5.4 (2.8) and 22.0 (7.8) years in academics, ($P<0.001$). Junior respondents were more likely to be female than senior respondents (57 *vs* 36%, $P=0.006$) and spent a larger proportion of time in clinical care ($P=0.085$). Senior respondents were more likely to have a research niche (40 *vs* 55%, $P=0.045$) and to have international/national recognition for their work (52 *vs* 7%, $P<0.001$). There was no significant difference in salary sources and grant funding between groups. For both junior and senior respondents, the two most frequently reported benchmarks of success were publications (30 and 24%) and respect/recognition by peers (19 and 32%). The ability to obtain grants and federal funding was the third most frequent benchmark for junior respondents (13%) while personal satisfaction ranked third for senior respondents (23%). For both groups, the three most frequently reported obstacles to a successful academic career were time constraints (36 and 32%), funding for research (20 and 25%), and salary (17 and 25%).
Consistent with previously published findings, time constraints and research funding were important concerns to academic faculty and we have found that those perceptions do not change with length of time in academia. Research funding appears to be of greater concern for junior faculty as it was frequently expressed to be both an obstacle as well as a benchmark of success. Currently, there is a relative shortage of academic dermatologists and new faculty are facing increasing demands to spend more time in clinic given less federal funding resources for research. It is imperative that junior faculty be provided start-up and bridging packages with protected time and funding set aside for academic endeavors.

# 21

## Reduced incidence of melanoma in a VA population using statins: a case-control study

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A large cohort study (1) has reported significantly lower melanoma incidence in an older, largely male population of US veterans taking more than 10 mg (simvastatin dose equivalent) per day of statins. We used an alternative study design, a case control study, to further examine the relationship between melanoma and statins in the US Veterans Administration (VA) population. This case control study used data from the Salt Lake City VA Medical Center. Melanoma cases were each matched to three controls based on age, gender, and race. All patients received health care from the VA system for at least 18 months prior to the diagnosis of melanoma cases. Eligibility criteria for cases included histological confirmation of *in situ* or invasive melanoma. Multivariate logistic regression was used to calculate odds ratios and 95% confidence intervals for statin exposure, and *t*-tests and chi-square tests were used to compare characteristics between melanoma cases and controls. All statistical tests were two-sided.
A group of 146 patients diagnosed with melanoma were compared to 519 controls. Statin exposure had to occur for at least 6 months prior to melanoma diagnosis in relevant cases. Fewer melanoma cases (38.2%) than controls (62.6%) took statins. The odds of developing melanoma decreased with statin use (OR 0.35 95% CI 0.23–0.52, $P<0.0001$). A subgroup analysis of 27 cases and 313 controls where complete dose information was available, showed a dose-response for cases on greater than 10 mg simvastatin equivalent compared to those on lower daily dosages (OR 0.26 95% CI 0.15–0.43, $P=0.45$). The study contained several limitations which we will discuss.

[1] Farwell WR *et al.* (2008) The association between statins and cancer incidence in a veterans population. *JNCI* 100:134–9.

# 22

## Importance of mentoring for dermatology faculty

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The purpose of this study was to examine predictors and markers of success in academic dermatology. From 2007–2008 a survey about personal characteristics and career development was mailed to all faculty members of one academic dermatology department per state in the U.S. Academic level of respondents was approximated by duration in academia as junior (1 to $\leqslant$10 years) and senior (>10 years). Respondent characteristics were compared across these academic levels using Student's *t*-test and chi-square testing. One proposed marker of success was defined by level of recognition for a faculty member's clinical/research niche (local, regional, national, international). Predictors of this marker were evaluated using linear regression. Statistical analyses were performed with SPSS 15.0.
Response rate was 179/484 (37%). Junior ($n=86$) and senior ($n=93$) respondents had a mean (SD) age of 40.2 (7.3) and 54.7 (7.7) years, ($P<0.001$) and had spent 5.4 (2.8) and 22.0 (7.8) years in academics, ($P<0.001$). Junior respondents were more likely to be female than senior respondents (57 *vs* 36%, $P=0.006$). Respondents were mostly full time faculty but junior level respondents were more likely to have ever worked part time (31 *vs* 15%, $P=0.015$). A majority of respondents (89%) self reported having a clinical niche with no significant difference between groups while those reporting a research niche were more likely to be senior respondents (40 *vs* 55%, $P=0.045$). Senior respondents were more likely to have international recognition for their work (52 *vs* 7%, $P<0.001$). A multivariate regression with level of recognition for clinical/research niche as the dependent variable showed age ($P=0.04$), number of mentors ($P=0.002$), and academic level ($P=0.024$) as being positively associated with higher levels of recognition. Having ever worked part time was negatively associated with level of recognition ($P=0.044$) and gender did not have a significant association ($P=0.311$).
When controlling for age, gender and academic level, achieving international or national recognition for one's work was positively correlated with having a greater number of mentors, perhaps due to the benefit of advice and networking assistance from a variety of sources. Level of mentorship is a quality that can be modified by individuals and academic departments. Greater emphasis should be put on fostering mentorship relationships between residents and junior faculty with more senior members to facilitate the continued strength of academic dermatology programs and their faculty. Additional support may be necessary to retain junior faculty who work part time while starting a family.

# 23

## Benchmarking U.S. department of veterans affairs dermatologic mission fulfillment

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The U.S. Department of Veterans Affairs medical system provides health care to more than 5.5 million US veterans annually in more than 1,400 locations. It employs more than 150 dermatologists to carry out the threefold mission of providing dermatologic patient care, educating future physicians and conducting medical research in dermatology.
During the summer of 2007, a benchmarking survey was mailed to VA dermatology service leaders ($n=105$) of which ($n=70$) 67% responded to the written questionnaire. Respondents were most frequently men (65%) on VA staff for >5 years (63%).
All VA dermatology services provided dermatologic patient care, though 10 (14%) reported no dermatologists on staff. The services provided varying degrees of access to different therapies: MOHs surgery (84% of services) >phototherapy (59%) >teledermatology (30%) >photodynamic (18%) and laser therapy (18%). Most services ($n=46$, 66%) trained dermatology residents and medical students ($n=48$, 70%). Only 16 services (24%) reported doing research.
The VA medical care system is currently fulfilling its dermatology patient care mission best and shows room for improvement in fulfilling its training and research missions.

# 24

## Depression and incident lower extremity amputation in veterans with diabetes

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In patients with diabetes, depression is associated with a higher risk of complications (eg macrovascular and microvascular disease and death), but the risk of lower extremity amputation (LEA) is unknown. In a cohort of patients with their first diabetic foot ulcer, depression was associated with an increased risk of death but not LEA. Veterans with diabetes and decreased mental health functioning had a higher incidence of LEA, but the role of depression itself was not examined.
We aimed to test whether diagnosed depression is associated with incident non-traumatic LEA in patients with diabetes. This retrospective cohort study from fiscal year 2000 included 554,725 United States veterans from the Diabetes Epidemiology Cohort, a national Veterans Affairs (VA) registry with both VA and Medicare data. Depression was defined by International Classification of Diseases 9th revision (ICD-9) codes or antidepressant prescriptions. LEA was defined by ICD-9 codes. We used a Cox proportional hazards model to determine the hazard ratio (HR) and 95% confidence intervals (CI) for incident non-traumatic LEA, comparing patients with and without diagnosed depression and adjusting for demographics, health care utilization, diabetes severity, and other medical and mental health conditions. We also obtained HRs for major (transtibial and above) and minor (ankle and below) LEA subtypes.
Over four years of follow up, 4,055 (7.3/1,000) patients experienced incident LEA, with 989 (1.8/1,000) major LEA. Diagnosed depression was associated with an adjusted HR of 1.14 (95% CI: 1.04, 1.24) for any LEA and an adjusted HR of 1.43 (95% CI: 1.21, 1.68) for major LEA.
In veterans with diabetes, depression has a modest association with incident non-traumatic LEA. The association is stronger for major LEA. These results support more aggressive depression screening and treatment in patients with diabetes. Further study is needed to determine whether depression treatment will decrease LEA rates, particularly in patients with diabetic foot ulcers, a group at high risk for LEA.

## 25

### Does method of selecting starting dose affect efficacy of narrow-band ultraviolet B phototherapy for psoriasis?

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Narrow-band ultraviolet B (NB-UVB) phototherapy is a standard treatment for moderate to severe psoriasis. For safety reasons, the first dose is often based on measurement of the minimal erythemal dose (MED), the lowest dose to cause just perceptible erythema. This study was designed to compare the efficacy of treatment with different methods of selecting the starting dose.

A 210 patients (designed for 90% power to detect a difference of 3 or more treatments to clearance/minimal residual activity [MRA] between groups), single-centre, randomised, double-blind, parallel group comparison of NB-UVB phototherapy given according to 3 standard regimens, differing only in method of selection of starting dose, was performed. The starting doses compared, in adults with chronic psoriasis, were a standard skin-type based starting dose, 70% of individual MED and 50% of individual MED. Measures to prevent patients and observers from knowing treatment allocation group included performing MED testing in all subjects, even those allocated the skin-type starting dose.

Fifteen patients allocated the standard start dose were in fact started at lower doses than allocated. For patient safety reasons, if the skin type start dose was >90% of the individual's MED then we started at 90% of MED. One patient, allocated standard start dose based treatment, showed marked erythema and oedema at even the lowest MED test dose so did not proceed with treatment and was subsequently diagnosed with chronic actinic dermatitis.

We did not detect a significant ($P \leqslant 0.05$) difference in numbers of treatments to clearance/MRA across all 3 groups, nor in the percentages achieving clearance in each group. Unexpectedly, important (uncomfortable or painful) erythemas occurred more in the 50% MED start group, with 21% of the 70% MED group, 24% of the skin type group and 43% of the 50% MED group suffering at least one such erythema ($P = 0.01$, chi-squared).

So, start dose allocation did not influence the effectiveness of treatment. However, one patient allocated a skin type based start dose would probably have suffered severe adverse effects if the MED had not prompted diagnosis of severe abnormal photosensitivity.

Choice of start dose allocation method is important for patient safety but perhaps not for treatment efficacy.

## 26

### The quality of life impact of melanoma

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The high incidence of melanoma (MM) highlights the importance of quantifying its impact on quality of life (QOL) through measuring utilities. Utilities measure preferences for health states ranging from 0 to 1, with 0 representing a state equivalent to death and 1 equivalent to perfect health. Utilities can incorporate QOL in cost-effective analyses (CEA), however it is unclear whether proxy populations can be used to estimate MM utilities. We sought to elicit utilities directly from MM patients, assess the face validity of our data, and explore whether MM patients can estimate utilities of other stages. We hypothesized the QOL impact of higher stages would be greater thus the utilities would be lower. Similarly, we proposed with time QOL impact would decrease (higher utilities).

Consecutive patients were recruited from the Emory Melanoma and Pigmented Lesion Clinic to participate in a computer-based time trade-off program to elicit utilities at their stage of melanoma and stages other than their own. Patients were divided into two groups, new (<1 year after diagnosis) and established (>1 year after diagnosis except stage IV where established =>6 months after diagnosis). Elicited utilities were compared through analysis of variance and differences in demographics examined with *t*-test and chi square for continuous and categorical variables.

163 predominantly Caucasian patients (99%) with an average age of 51 years showed a statistically significant decrease in utility scores with increasing stages in both newly (I, II>III, IV $P = 0.0011$) and established (I, II, III>IV $P = 0.0001$) diagnoses. For stage III, a statistically significant increase in utility score for new diagnoses (0.5340) *vs* established (0.9081) was also seen ($P = 0.008$). New stage I patients accurately hypothesized disease impact in new stage II and III patients. Established stage I patients overrated the impact of new stage II and IV disease while new stage I patients overrated the impact on new stage IV patients. Stage II patients inaccurately estimated utility in newly diagnosed stage I patients.

Our data appear to capture MM burden. Utility scores decrease with increasing stage of melanoma however they do not universally increase with time. This may be due to the high 5 year survival of the lower stage melanomas and the low numbers of Stage IV subjects. Overall, patients were unable to consistently estimate the QOL impact of MM at other stages. Thus MM CEA should use utilities elicited directly from patients.

## 27

### The effect of NSAIDs on the incidence of cutaneous melanoma

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Chemoprevention has been proposed as a valid strategy to complement current prevention of the cutaneous melanoma (CM). Non Steroidal Anti Inflammatory Drugs (NSAIDs), including acetylsalicylic acids (ASAs), have been hypothesized to affect CM development, progression and/or mortality, which was confirmed in *in vitro* studies.

We investigated the association between NSAIDs and the incidence of CM. Data were used from PHARMO, a pharmacy database, and PALGA, a pathological database, in the Netherlands. A case-control study was performed. Cases had a primary CM diagnosis between January 1st 1991 and December 14th 2004, were >18 years and had >3 years complete follow-up in PHARMO before the CM diagnosis. Controls were matched for age, gender, and geographical region. Analyses were performed separately for the use of ASA and non-ASA NSAIDs and were stratified according to gender. Odds Ratios were adjusted for age, gender, year of diagnosis, number of medical diagnosis and number of medications prescribed, and use of statins and estrogens.

Finally, 1,318 cases and 6,786 controls were included. None of the ASA use variables was significantly associated with CM incidence in the total study population and men. In women, continuous use of low dose ASA (30–100 mg daily) for 3 years reduced the likelihood of developing a melanoma (Adjusted OR 0.54, 95%CI 0.30–0.99). For the non-ASA NSAIDs, relative low exposure (1–600 pills) was associated with a modest increase in CM risk, and higher levels of exposure appeared to be protective, but none of these associations were significant.

Our data suggests a protective effect of continuous low dose use of ASA, but only in women.

## 28

### Evaluating the effect of skin disease using a Runyankore-version of Skindex-16 in Mbarara, Uganda

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Dermatology quality of life (QoL) instruments aim to measure the specific effect of skin disease on QoL. Most have been developed in English in resource-replete settings. A translated, culturally appropriate and standardised instrument would be valuable tool in dermatologic research.

This study aims to adapt Skindex-16 for use in the mainly Runyankore-speaking community in Mbarara, Uganda – a resource-limited setting where literacy rates are low. Two independent bilingual persons translated Skindex-16 to Runyankore and back-translated it to English. The 2 versions were compared for agreement of translation by the authors. Skindex-16 was administered verbally to 47 consecutive patients from the Dermatology clinic and 47 random non-patient participants visiting the hospital. Cross-cultural adaptations for Skindex-16 have been done in several languages with a similar study design. Basic demographic data was collected and chart reviews were carried out for patients. Participants were asked for the duration, presence of skin colour change and concealment status of their skin problems as well as an open-ended question ''How does your skin problem(s) bother you?''

4 items in Skindex-16 had no equivalent terms in Runyankore but the translations were judged satisfactory or almost satisfactory by the authors. Cronbach $\alpha$ values were 0.86, 0.88 and 0.85 for the Symptoms, Emotions and Functioning subscales, respectively. Participants with skin problems and skin colour change had higher Skindex scores, hence worse QoL, demonstrating construct validity ($P < 0.01$ for all 3 scales). A majority of responses to the open-ended question were addressed in Skindex-16, demonstrating content validity. This preliminary evaluation of the Runyankore-version of Skindex-16 suggests it is a reliable and valid measure of the effect of skin disease on the quality of life of patients in Mbarara, Uganda.

# 29

## Health services utilization and treatment of elderly subjects with atopic eczema

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Although atopic eczema (AE) is recognised as a major health problem worldwide, the main focus in research is restricted to affected children. Data on the epidemiology of AE in the elderly and health services utilization due to AE in this subpopulation are missing.
This study used an administrative health care database from Germany with complete information on outpatient health services utilization and prescription data of 222,397 elderly individuals (aged $\geqslant$65 years) from the general population. To provide a conservative estimate of the prevalence of AE, only patients diagnosed as having AE (ICD-10 L20) at least twice in 2003 and 2004 were included in the analysis. We estimated the 2-year prevalence of AE in elderly subjects and analysed health services utilization and treatment of elderly patients with AE in everyday practice.
The prevalence of AE was 2.3% in men and 2.3% in women aged $\geqslant$65 years. In men the prevalence of AE increased with age, while similar proportions of women were affected across all 5-year age groups $\geqslant$65 years. 42% of patients were treated exclusively by dermatologists, 41% exclusively by general practitioners, and 16% jointly by dermatologists and general practitioners. Within the 2-year study period, 30% of patients had two consultations, 30% had three or four consultations, 16% had five to seven consultations, and 14% had eight or more consultations due to AE. The majority of patients (63.6%) were treated with topical corticosteroids (TCS). Topical pimecrolimus and tacrolimus were prescribed to 1.5 and 1.4% of patients, respectively. 12.6% of patients received systemic corticosteroids for the treatment of AE. None of the patients received cyclosporine. Skin prick tests were performed in 6.9% of patients. 2.7% of patients were tested for allergen-specific IgE. These diagnostic procedures were most likely performed by dermatologists.
This analysis highlights that AE is a prevalent and relevant condition in the elderly. In Germany, outpatient treatment of AE in elderly patients is dominated by TCS, whereas topical calcineurin inhibitors are rarely prescribed. Despite lacking evidence from clinical trials high proportions of patients received systemic corticosteroids from dermatologists and general practitioners. To reflect the considerable prevalence of AE in the elderly future research is important to evaluate the safety and efficacy of existing anti-eczematous treatments in elderly patients and to better understand their specific needs.

# 30

## Pharmacoepidemiology using clinical trials in heath systems: ACE inhibitors and reduced skin cancer risk in the VATTC trial

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Pharmacoepidemiology is a powerful approach to understanding the profound effects of systemic medications on cutaneous diseases (J Invest Dermatol 2007:127:1851). We examined the hypothesized association of angiotensin converting enzyme (ACE) inhibitors and receptor blockers (ARB) with incidence of keratinocyte carcinomas (KCs) in the V A Topical Tretinoin Chemoprevention (VATTC) Trial. We followed 532 users of these medications and 519 non-users within this high risk cohort. Key risk factors for KC were assessed at enrollment, all prescriptions received were ascertained from V A pharmacy records and all KCs were ascertained from VA pathology records and verified by blinded study dermatopathologists. Participants were examined semiannually by study dermatologists for new KCs. The outcomes of time to basal cell carcinoma (BCC) and time to squamous cell carcinoma (SCC) were analyzed using Cox regression and by a propensity score matched analysis.
During a median of 3.4 years follow-up, 472 incident BCCs and 309 incident SCCs were diagnosed. For BCC the adjusted incidence rate ratio (IRR) for ACE/ARB users *vs* nonusers was 0.61 (95% CI 0.50–0.76), and for SCC, IRR = 0.67 (95% CI 0.52–0.87). Initiation of the medication during the trial was associated with a greater depression of both BCC and SCC risk. No effect on BCC or SCC risk was observed with other antihypertensive classes of medications, ie calcium channel blockers, beta blockers, or diuretics. These associations suggest a substantial chemopreventive effect of ACE inhibitors and ARBs for both types of KC. This example also illustrates the potential of clinical trials, which often have excellent outcome ascertainment, that are conducted in health systems, in which key variables may be routinely and reliably ascertained, to uncover important pharmacoepidemiologic associations.

# 31

## Observer agreement in nail findings. Do we all mean the same?

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Onychomycosis is very prevalent. Clinical diagnosis is confirmed by direct examination, fungal culture or pathology. These are time-taking and do not give optimal results. We aim to produce a clinical rule for diagnosis of onychomycosis. Our first step was a study of observer agreement in nail findings.
In a cross-sectional study, 83 consecutive new patients with toenail disease that included onychomycosis as a differential diagnosis were assessed independently by two dermatologists. They described the presence of 10 findings on previous history and 14 physical signs. We calculated kappa index, and report Landis-Koch interpretation.
Agreement was fine for previous history findings: It was almost perfect (kappa $>$0.81) for previous diagnosis of diabetes, smoking and use of public dressing rooms or swimming pools. Agreement was full (kappa 0.61–0.80) for immune depression (drugs or cancer), previous diagnosis of fungal disease and worsening in the last year. It was moderate (kappa 0.41–0.60) for previous diagnosis of arterial disease, trauma induced by work or sports, and distal *vs* proximal or lateral *vs* central start of the lesion. Agreement was worse for physical signs: we found full agreement for the presence of same disease in hand nails, abnormal plantar desquamation, deformity causing nail trauma, and subungual hyperkeratosis. It was moderate for the presence of tinea interdigitalis, pachyonichia, onycholysis, and the type of material obtained by subungual curettage (dust *vs* hard). Agreement was low (kappa 0.21–0.40) for the presence of longitudinal or transversal striae, trachyoniquia, and change in colour of the nail plate. Pitting was too infrequent to allow for kappa calculation. Chance expected agreement was between 52 and 83% for all signs except pitting.
Agreement is adequate for most signs. It is low for the presence of longitudinal or transversal striae, trachyoniquia, and change in colour of the nail plate. Pitting is rare in toenails. We will not include these low agreement signs in the development of a clinical rule for diagnosis of onychomycosis.
This study was supported by a grant of Conselleria de Sanidade (PS07/19). Xunta de Galicia.

# 32

## Do environmental factors influence eczema activity? – a panel study

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Only a few previous studies have shown associations between environmental factors and worsening of eczema. For many purported flare factors, scientific data are absent. The discovery of filaggrin mutations in eczema has lead to the hypothesis that gene-environmental interactions may be the reason why different individuals respond differently to potential environmental aggravating factors such as cold or dryness. In this study, the impact of selected environmental variables on eczema severity was studied prospectively. Pre-specified hypotheses and exploratory hypotheses were tested.
A panel of 60 children with atopic eczema aged up to 15 years was studied for between six and nine months. They completed daily electronic diaries recording eczema severity and exposures. Portable dataloggers were used to record indoor temperature and relative humidity in an automated fashion. External meteorological data was obtained from a local monitoring centre. Autoregressive moving average models (ARMA) were used to model the impact of exposures on eczema severity for each individuals. Standard meta-analysis methods were used to pool estimated coefficients across participants and assess heterogeneity of responses. Site-specificity of reactions and possible interactions between filaggrin mutations and disease worsening with exposures was assessed.
Increased disease severity was noted for those in contact with nylon clothing (pooled regression coefficient 0.34, 95% CI 0.14–0.54), dust (pooled regression coefficient 0.46, 0.18–0.75), and exposure to unfamiliar pets (pooled regression coefficient 0.22, 0.10–0.34), sweating (pooled regression coefficient 0.21, 0.01–0.34) and shampoo exposure. The effects of shampoo were worse in cold weather (pooled regression coefficient 0.30, 0.04–0.57). Site specificity was observed for reactions to nylon clothing, which was worse on covered sites (trunk $P=0.02$, limbs $P=0.03$) while worsening of hand eczema was seen with pet exposure ($P<0.001$). The only interaction with filaggrin mutations was observed for the 2282del4 mutation and worsening in summer. Significant heterogeneity of responses between individuals was observed for exposure to grass pollen and outdoor temperature. For our exploratory analyses, a combination of any three of seven likely variables was associated with worsening of eczema.
Our study suggests that certain irritants may worsen eczema severity. Other factors such as dust, nylon clothing and exposure to unfamiliar pets were also associated with worsening of eczema and the latter two factors showed site specificity. Children responded in different ways to exposures including grass pollen and outdoor temperature. Preliminary data also suggests that it may be the combination of several factors that may explain disease worsening.

## 33

### Quantative evaluation of clinical psoriasis severity measures: results of a systematic review

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A wide variety of clinical psoriasis severity outcome measures have been proposed and utilized. Uniformity would be helpful for comparing and pooling results of clinical trials. No systematic overview of the attributes of the different clinical psoriasis severity measures is available yet.
The purpose of this article is to compare these different measures using adapted quality criteria (validity, reliability, responsiveness, response distribution, interpretability, ease to administer and uniformity) that have been advocated for evaluating outcome measures.
A combination of searches were performed 0.57 different psoriasis severity measures were retrieved, reduces to ten major clinical severity measures for psoriasis research. After applying the eligibility criteria for evaluating the quality of the severity outcome measures, 38 articles remained for data-extraction.
The individual quality criteria for these measures are often not well reported or defined. None of the existing measures has been tested for all the quality criteria of outcome measures. Of the investigated outcome measures, the Lattice-System Physician's Global Assessment and the Physician's Global Assessment are tested most adequately.
Further refinement and consensus is necessary for the quality criteria for severity outcome measures in general, in dermatology and in psoriasis together with additional research for certain quality criteria of the most promising outcome measures so that better judgments of outcome measures can be made.

## 34

### PO-SCORAD: a SCORAD for the patient. A preliminary feasibility study

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The current recommendations for managing chronic illness tend towards involving the patient in the treatment process and self-assessment tools have been developed for chronic diseases. There are very few validated self-assessment scores for Atopic Dermatitis. A patient assessment, the PO-SCORAD (Patient Oriented SCORAD) score was launched based on an already validated and recognised score (SCORAD).
A prospective, monocentric, pilot study was carried out in order to assess the feasibility and the accuracy of the PO-SCORAD. The study was carried out in a thermal spa on a group of 33 atopic dermatitis sufferers (15 children, 18 adults). On both Day 0 and Day18 a SCORAD was done by the doctor and a PO-SCORAD by the patient. The feasibility (time spent, comprehensibility) was assessed by a questionnaire. The accuracy was assessed by comparing the SCORAD and the PO-SCORAD during the medical visits on D0 and D18.
80% of the patients reported that the questions were clear, and 82% considered the assessment easy to do. The time spent was less than 5 minutes for 49%. Two parts were more difficult to understand: the assessment relating to lichenification and the evaluation of the extent of the disease on the body surface. Finally a significant correlation was found between the SCORAD and the PO-SCORAD, even though the correlation coefficients remain relatively modest ($r = 0.46$; $P = 0.0006$) especially at D0. At day 18 the correlation score had improved: 0.61 ($P$ : 0.0033) *vs* 0.27; ($P$ : 0.14) at D0.
Despite the small number of patients, and the absence of any preliminary explanations, the results show that there is a statistically significant correlation between the PO-SCORAD and the SCORAD. This is especially true after the second consultation (D18). We suggest that giving a short explicative document to the patient before the first consultation would significantly increase the correlation SCORAD/PO-SCORAD after the first visit, and we have compiled a document for this purpose. This study was the first step in the validation process of the PO-SCORAD. The next step, a real validation study, is already underway.

## 35

### The burden of skin disease in the United Kingdom

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The aim of this study was to quantify two facets of the burden of skin disease in the UK-the epidemiology (incidence, prevalence and mortality) and the cost. In addition to published sources, data were obtained from the Proprietary Association of Great Britain (PAGB), the Royal College of General Practitioners Birmingham Research Unit (RCGPBRU).
In the most recent study of self-reported skin disease undertaken by PAGB in 2005, 818 of 1,500 respondents (54%) had experienced one or more skin conditions in the preceding twelve months. Compared with two earlier PAGB studies the range of skin conditions enquired about was much less comprehensive, suggesting significant under-reporting. The prevalence of skin conditions in England and Wales in Primary Care in 2006 reported by the RCGPBRU was 2,626 per 10,000 persons (26.26% of the population or 13.67 million people). This prevalence is greater than all other disease groups seen in Primary Care. It is higher than previously documented as it includes all skin conditions, not just those in ICD Chapter XII. Skin infections and dermatitis are the commonest diagnostic groups seen in Primary Care. In England to 31st March 2006 there were 788,799 people seen in NHS specialist dermatology departments. This represents 6.1% of all those presenting in Primary Care with skin disease. The management of skin lesions including skin cancer comprises between 35 and 48% of specialist activity, depending on the unit. There were 3,752 deaths from skin disorders in 2005 (including malignant melanoma) accounting for 0.64% of all UK deaths.
In 2007 over the counter (OTC) sales of skin treatments represented £413.9 million, 18% of total OTC sales. The cost of prescription items dispensed in England by therapeutic classification based on the British National Formulary Chapter 13 for skin disease was £238.7 million (2.85% of total) in 2007. Gross NHS expenditure on skin problems in the year 2005/06 was £1,424 million in England and Wales comprising 2.22% of overall NHS spend. This excludes Primary Care expenditure on consultations for skin diseases.
These results show a large burden of skin conditions in terms of the overall prevalence of disease. Specialists only see a small proportion of people with skin conditions. Despite the high prevalence and high consultation rates for people with skin conditions, the cost of delivering care comprises a relatively small part of the NHS budget.

## 36

### The problem of quantifying skin disease in the United Kingdom: coding confusions

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The starting point for commissioners of services for patients with skin conditions is to undertake a needs assessment to quantify the needs of the local health community using reliable information about the prevalence and incidence of disease. The aim of this report is to highlight some of the difficulties that are likely to be encountered when collating this information from coded activity and hospital activity statistics in the UK.
Most incidence, prevalence and mortality data are captured and presented using the ICD 9 or ICD 10 Chapter XII codes for Diseases of the Skin and Subcutaneous Tissues. While the chapter provides detailed coverage of a huge range of skin diseases it is of limited operational value because it misses out important diseases. Important exclusions from Chapter XII include all skin tumours (benign and malignant), which comprise up to 50% of specialist workload and skin infections (eg herpes simplex, viral warts, dermatophytoses). Reports using the data relating to the Chapter therefore greatly under-estimate the amount of skin disease. This underestimation of skin disease prevalence is demonstrated when considering Primary Care data. The annual prevalence data published by the Royal College of General Practitioners Birmingham Research Unit for 2006 gives a prevalence for ICD Chapter XII of 1,514 per 10,000, but when the important excluded diagnoses are added the prevalence increases to 2,626 per 10,000-a 73% increase in prevalence. The mortality data for skin disease using Chapter XII (recorded as 1,935 in the UK in 2005) does not capture deaths due to malignant melanoma (1,817 in the UK in 2005) and squamous cell carcinoma of the skin.
Coding for In-Patient hospital episodes is now fairly well developed in England because of its link to Payment by Results. However there is currently no national requirement to capture diagnostic information in relation to Out Patient specialist dermatology activity resulting in very limited information availability. Some enthusiastic dermatologists have developed local In-House systems and use the British Association of Dermatologists (BAD) diagnostic database to collect data. The BAD Index is a very detailed, comprehensive hierarchical classification structure for skin diseases.
In summary, when completing a needs assessment in relation to prevalence, incidence, mortality and diagnostic casemix it is essential that all those involved in the process are aware of the major difficulties and limitations of the coding systems and activity data with which they may be presented.

## 37

### Interventions to reduce *Staphylococcus aureus* in the management of atopic eczema

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The objective of this Cochrane systematic review of randomised controlled trials (RCTs) was to determine whether agents to reduce *Staphylococcus aureus* offer any clinical benefit in the management of atopic eczema (AE).
We searched the Cochrane Skin Group's Specialised Register, the Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE (from 2000), EMBASE (from 1980), the metaRegister of Current Controlled Trials up to 31st October 2006, plus manual follow up of references and dermatology conference proceedings.
RCTs were included if they compared any intervention to reduce *S. aureus* in patients with AE with no treatment, vehicle only, or another active compound eg topical steroid/antibiotic combination compared against the same topical steroid without antibiotic. Publication status and language were not barriers to inclusion.
In total, 21 studies involving 1,018 participants were included. The studies were generally of poor quality. None of the trials showed any clear benefit in terms of short-term eczema control for any of the interventions tested in either infected (OR 0.26, 95% CI 0.05–1.26)) or uninfected AE (OR 0.25, 95% CI 0.05–1.34), although several interventions were associated with decreased numbers of *S. aureus* on the skin (OR 0.02, 95% CI 0.00–0.2). There was no clear evidence that widely used topical steroid/antibiotic combinations were any better than the topical steroids used alone (Mean Difference −1.08, 95% CI −2.51, 0.35). Opportunities for pooling data were limited owing to study heterogeneity.
Although it is clear that anti-staphylococcal interventions reduce Staph aureus counts on the skin, none of the studies included in this review has showed clear clinical benefit for anti-staphylococcal interventions in non-infected eczema. Their continued use should be questioned in such situations. It is clinical common sense to treat overtly infected eczema with oral antibiotics, and that practice should continue until good evidence suggests otherwise. Further research should evaluate the long term possible benefits and harms of such interventions in preventing flares of atopic eczema.

## 38

### How well do questionnaires perform compared to physical examination in detecting flexural eczema? Findings from the International Study of Asthma and Allergies in Childhood (ISAAC) Phase Two

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Questionnaires are widely used in epidemiological studies to diagnose eczema when physical examination may be impractical. While the use of questionnaires permits the study of large populations, concerns exist about their validity.
The second phase of the International Study of Asthma and Allergies in Childhood (ISAAC) employed both a validated questionnaire for symptoms in the last 12 months and a standardized skin examination protocol to diagnose flexural eczema at one point in time. We indirectly compared these two outcome measures.
30,358 schoolchildren age 8–12 from 25 study centres in 18 countries were physically examined for flexural eczema. The day before, their parents filled out a questionnaire regarding eczema symptoms in the past 12 months. We compared prevalence estimates at the population level across 18 centres based on questionnaires and physical examination. We also compared skin exam and the ISAAC questionnaire in making a diagnosis of flexural eczema in individual participants.
As expected, the point prevalences for flexural eczema based on one examination gave lower prevalence estimates than ''flexural eczema in the past 12 months'' based on questionnaire at centre level (mean centre prevalence 3.9 *vs* 9.4% respectively). Correlation between both outcome measures was high at centre level ($r = 0.77$). When we compared a questionnaire-based diagnosis of ''persistent flexural eczema in the past 12 months'' *versus* skin examination, both prevalence measures were even more closely related ($r = 0.82$). At the individual level, questionnaire-based ''persistent flexural eczema in the past 12 months'' missed less than 10% of cases of flexural eczema detected on physical examination. However, between 33 and 97% of questionnaire-diagnosed ''persistent flexural eczema in the past 12 months'' was not confirmed on skin exam.
Comparing questionnaire definitions for eczema that refer to a 12 month period and physical examination based on one time point is difficult in a disease that remits and relapses. This study provides evidence that questionnaire-derived prevalences are sufficiently precise as population estimates and for comparisons across populations. However, where diagnostic precision at the individual level is important, as in risk factor analyses, questionnaires should be validated in those populations beforehand, or a standardized skin examination protocol should be encouraged.

## 39

### Patient preferences regarding systemic and photo(chemo) therapy including biologics for psoriasis: a systematc review

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During the last few years in which quite some new drugs have entered the market for psoriasis, several clinical management guidelines have been developed aiming at improving the care for psoriasis patients. Although based on relevant parameters like safety and efficacy, the patient's preferences and satisfaction with therapies have been neglected in the development of these guidelines. We already know however that 20–42% of psoriasis patients are dissatisfied with their treatment. The preferences and satisfaction with therapy are especially important since they are expected to be related to patient compliance with therapy, which has repeatedly been seen as a major concern in health care.
The purpose of this study is to investigate what is known regarding the patient preferences and satisfaction with the available systemic and photo(chemo) therapies, including the five biologics, for the treatment of psoriasis.
We performed a systematic litarature search in Pubmed and EMBASE for studies in which patient satisfaction and/or preferences regarding systemic and/or photo (chemo)therapies have been investigated.
The search retrieved 678 articles of which ten studies met the inclusion criteria. The study designs, patient populations, outcome parameters and compared treatments differed mutually between these studies as well as the quality. It seemed that PUVA scores better on patient satisfaction when compared to the other conventional therapies like methotrexate, cyclosporine and UVB. In the studies comparing biologics to the conventional therapies however, biologics were preferred above the other therapies. UVB seemed to score low overall.
We conclude that very little is known regarding patient preferences and satisfaction with the systemic and (photo)chemotherapies for psoriasis. The evidence is too limited to be able to rank the several therapies based on the patient's preferences.
These findings suggest that more studies need to be done to investigate the opinion of the patient regarding systemic therapies for psoriasis. To do this, beter methods to investigate preferences and satisfaction with therapy should be developed. A uniform approach to investigate these aspects will able us to compare the results. Knowing psoriasis patients preferences for systemic and photo(chemotherapies) will allow us to ameliorate guidelines on this subject and improve the care presented to these patients.

## 40

### An epidemic of severe dermatitis caused by fungicide sachets inside furniture

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In February 2007, an email came to the Finnish dermatologists' list server asking for advice about an unusually severe dermatitis on the backs and buttocks of 3 patients, some needing hospitalization. The following day another colleague reported seven similar cases. Soon a report came of a similar patient, who, in patch tests, reacted strongly to the material of his Chinese recliner chair. Soon over 50 cases had been identified in Finland. Investigation found that all patients owned a chair or chairs made by the same Chinese factory. In summer 2007, similar cases started to appear in the UK, and there are now several hundred reports in the UK of sofa dermatitis, all linked to the same furniture factory in China.
Clinical findings in Finland and the UK are very similar and unlike any known dermatosis. A lot of the cases have been quite severe, resembling, eg mycosis fungoides or septic infections, and many patients were hospitalized. Commercial patch tests did not reveal the cause but a fungicide was strongly suspected, although such use was denied by the factory in China. The laboratory of Malmö Dermatology Clinic helped in the identification process by performing thin-layer chromatograms and making test substances. Eventually, sachets marked ''MOULDPROOF AGENT'' were found in varying numbers and distribution in the sofas. These contained the fungicide dimethylfumarate which proved in skin tests to cause strong positive reactions even at 0.001 dilution. In the UK especially, a lot of litigation has begun but the factory in China has not yet admitted liability. More recently reports of similar incidents of dermatosis have also started appearing from other countries (Ireland, Sweden, Belgium, France).

## 41

### Measuring the prevalence of itch in the general population: results of a German pilot study

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Itching is the most frequent symptom in dermatology. Little is known about the occurrence of itch and its characteristics in the general population. The availability of valid and reliable measures specifically designed to measure itch and its characteristics is limited. The aim of this pilot study was to develop and validate an instrument measuring prevalence and characteristics of itch in the general population as well as associated factors (Quality of life (QoL) and affect). Based on a literature review and expert discussions a questionnaire was drawn up. It was then administered to a counterbalanced sample from the general population ($n=100$ from the city of Heidelberg: higher socioeconomic status; $n=100$ from the city of Ludwigshafen: lower socioeconomic status) and a sample ($n=100$) of patients suffering from chronic itch. The response rate was 59% in the non-patient group and 89% in the patients. The mean age of all responders was 63.7 years without any significant difference between the groups. 71.3% of the participants and 58.3% of the patients were female. The itch patients had a point prevalence of 78.6% and a 12-months-prevalence of 92.9%. Among the non-itch sample 14% reported current chronic itch, 16% reported chronic itch within the last 12 months and 17% reported to suffer from itch sometime during their life. A significant higher percentage of the patient group had a history of migration with a Non-German origin. The wording and order of the prevalence items needed changing. Principal component analysis revealed the instrument to be able to tap differentiating aspects of itch such as location, receipt of treatment and time characteristics. Internal consistency of the itch-related QoL and impact on affect scales were sufficiently high. Reported strength of itch was higher in patients and associated with itch-related QoL and impact of itch on affect in both groups. Our preliminary results show that the symptoms of itch appear prevalent in the general population and should hence receive adequate attention from dermatologists and other health care providers. In order to get more precise estimates a large population based study is underway.

## 42

### Cost of illness of work-related hand eczema in Germany

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In Germany, 26% of reported and 36% (=8,460) of all confirmed occupational diseases are skin-related, in over 90% of these cases hands are affected. However, there is a lack of comprehensive information on costs associated with chronic hand eczema (CHE). The objective of this study was to assess the direct and indirect costs of CHE.
Data on 151 Patients with work-related hand eczema entering consecutively a special rehabilitation program were assessed for the preceding 12 months. Data were derived from patient records, standardized interview taken by a dermatologist, dermatological examination and direct patient information. Quality of life (QoL) was assessed in all patients by using DLQI. Descriptive analyses from a societal perspective was performed for all patients and by physician-rated severity (severity group I: no/mild; group II: moderate/severe). DGUV (German Statutory Accident Insurance) was the payer for all patients.
Mean age was 44.9 years, 64.9% of patients were male. Total mean annual costs amounted to EUR 8,799 (95% CI: 7,030–10,567) per patient. Indirect costs represented 70% of total costs, in-patient-rehabilitation 13% and out-patient services 8%. Each other factor (diagnostics, drugs, complementary therapies, out-of-pocket expenses) contributed 3% or less to overall costs. Disease severity influenced QoL significantly (DLQI-score of severity group I: 7.9, 95%-CI 6.5–9.3; group II: 12.9, 95%-CI 11.3–14.4) but not direct treatment costs (EUR 2,705 *vs* 2,610 respectively). There was a trend for higher indirect costs in patients in severity group II (EUR 5,120, 95%-CI 2,717–7,523 *vs* 6,796, 95%-CI 3,997–9,596).
Total annual costs of work-related hand eczema are in the range of the costs of severe psoriasis and atopic dermatitis. Total annual costs of new cases covered by DGUV with confirmed occupational hand eczema is estimated to amount to EUR 60 million, considering also patients with suspected occupational hand eczema increases costs to EUR 104 million. Total costs of prevalent cases can be expected to amount to multiples of this figure, also due to well known underreporting of occupational hand eczema. Disease severity, although impacting patient's QoL, has little influence on treatment patterns and costs. Indirect costs, by far the most important cost factor, tend to increase with severity.

## 42

### Association of skin atopy and hand dermatitis: evidence from case-control studies nested in the PACO cohort

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It was the aim of the Prospective AUDI Cohort Follow-up Study (PACO II) to estimate occurrence, prognosis and risk of hand dermatitis (HD) in the metalworking industry.
Eligible participants were individuals who had been followed through until the end of their apprenticeship in the original PACO study (1990–1998, $N=1,909$). Participants were interviewed and the state of their skin on hands and/or forearms was examined. They underwent detailed dermatological examination and an exposure assessment was carried out according to a pre-defined algorithm.
Two case-control studies were nested within the cohort, one using current HD cases ($n=110$) and one using current cases with a presumption diagnosis of irritant contact dermatitis (ICD)/mixed form diagnosis with an irritant component ($n=57$). The control group consisted of 120 individuals with exposure information on a number of irritant and allergic agents. Multivariable, predictive modelling was performed, using logistic regression.
Atopic skin diathesis (ASD) occurred in 37.2% (95% CI 31.3–43.0%) of those with HD during the follow-up period ($N=261$), compared to 5.9% (95% CI 4.4–7.5%) of those without HD during the follow-up period ($N=909$) ($P<0.0001$). A history of flexural eczema occurred in 17.7% (95% CI 13.0–22.4%) of those with HD during the follow up period ($N=254$), compared to 3.0% (95% CI 1.9–4.1%) in those with no HD during the follow-up period ($N=908$) ($P<0.0001$)
An inverse association of age and a positive association of ASD as well as skin protection/skin care with HD was found in both case-control-studies. Wetwork $>=2$ hours daily remained positively associated in the eliminated model in the second analysis only. ASD was found be the single most important determinant of HD in both analyses, suggesting that constitution plays a dominant role compared to (single) environmental hazards in this setting.
HD appears as a disease predominantly determined by endogenous factors (age, ASD), compared to single occupational/environmental hazards.

## 44

### Impact of melanoma on patients' lives: cross-sectional population-based study in the South Netherlands

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The aim of this study was to evaluate the Health-related Quality of Life (HRQL) among 1/2–10 year survivors of melanoma and compare with an age and gender-matched norm population.[1] Also to evaluate the impact of melanoma and changes in sun behaviour and attitudes towards sun exposure since diagnosis.
Through the Eindhoven Cancer Registry, all patients diagnosed with melanoma between 1998 and 2007 ($n=699$) in 3 hospitals were invited for a cross-sectional evaluation of HRQL. In addition to demographic and disease characteristics, the questionnaire included the SF-36 and Impact of Cancer (IOC)[2] instruments and melanoma specific questions pertaining to treatment, symptoms, impact on daily life and follow-up. Multiple linear regression models were used to study predictors of SF-36 and IOC scores.
In total 562 patients completed the survey (80.4%). Respondents and non-respondents were comparable, except that non-respondents were younger ($P<0.01$). Of the participants, about 60% were women, average age of 57.2 years and 49% had a melanoma with a Breslow thickness of $\leqslant 1$ mm. Compared with an age-matched normative population, the component scores of the SF-36 were statistically but not clinically significant higher among melanoma survivors. Female gender, age, stage at diagnosis and SNP were all negatively independently associated with SF-36 physical component scale, whereas female gender and co morbidity were also negatively associated with SF-36 mental component scale. Female gender was also associated with significant higher positive and negative IOC scores compared to men ($P<0.01$). Time since diagnosis, stage at diagnosis and co morbidity were also associated with a negative IOC score. Compared to men, women also reported to have adjusted their sun-behaviour more often (67 *vs* 54%) and were more worried about the effects of UV radiation (66 *vs* 45%).
In conclusion the HRQL in survivors of melanoma appears to be similar to the general population. However, the majority of melanoma survivors is more afraid for the effect of the sun on their skin and have changed vacation destinations or daily activities and hobbies outside. These results raise questions as to whether the SF-36 is sensitive enough to assess HRQL issues in melanoma survivors. Therefore, there is need of a melanoma-specific HRQL instrument that can be used in the entire melanoma population to gain insight in patients' perspectives of having been diagnosed with melanoma.

[1] Aaronson NK *et al.* (1998) Translation, validation, and norming of the Dutch language version of the SF-36 Health Survey in community and chronic disease populations. *Journal of Clinical Epidemiology* 51:1055–68.
[2] Gudbergsson SB, Fossa SD (2007) The association between living conditions, demography and the ''the impact of cancer'' scale in tumor-free cancer survivors: a NOCWO study. *Support Care Cancer* 15:1309–18.

# 45

## Comparison of patients' and providers' severity evaluation of oral mucosal diseases

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The importance for providers of empathizing with patients is widely advocated. This is true also in oral health, which is an important component of general health, and has bi-directional and complex interactions with systemic health. In particular, oral mucosal lesions, such as oral ulcerations, candidiasis, burning mouth syndrome (BMS), morphology/color changes of tongue, and oral lichen planus (OLP), may have an important impact on patients' health.
The aim of this study was to compare the evaluation of the severity of different oral mucosal diseases by dermatologists and by the patients themselves. The underlying hypothesis was that, even in the global severity assessment of his/her own disease, it is plausible and understandable that a patient does not provide a simple clinical evaluation, but includes subjective aspects, which contribute to the burden of a disease. This would lead to different results compared to the providers.
For each patient, an overall clinical severity evaluation of the disease was given by the dermatologist (Physician Global Assessment, PGA) and by the patient him/herself (Patient Global Assessment, PtGA) on a 5-point scale: ''very mild'', ''mild'', ''moderate'', ''severe'', ''very severe''.
Data on both PGA and PtGA were complete for 145 patients (70% women; mean age 54 years). PtGA scores were concordant with PGA for 42.9–47.8% of patients, while 13.0% of patients evaluated as ''mild/very mild'' by physicians, were self-evaluated as ''severe/very severe''. However, there were also 23.8% of patients, whose clinical severity was considered as ''severe/very severe'' by the physician, who evaluated their disease as ''mild/very mild ''. Cohen's kappa coefficient between PGA and PtGA was 0.140, indicating a low concordance. The highest kappa coefficient was observed for patients with BMS (0.265), while in patients with non malignant lesions the concordance PGA-PtGA was below that observed by chance (−0.234). Under-estimation by the physician was particularly high in patients with ulcerations, with bacterial or fungal diseases, and with OLP.
In conclusion, we observed that the agreement between patients' and providers' evaluation of disease severity was very low. It is important to study the possible causes of these discrepancies, in order to improve the patients' satisfaction of care.

# 46

## Development and validation of a severity scale for leprosy type 1 reactions

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Type 1 reactions occur predominantly in individuals with the borderline forms of leprosy. 20–30% of individuals diagnosed with leprosy will have a type 1 reaction.
Type 1 reactions are characterised by inflammation of the skin, nerves or both. Type 1 reactions affecting the peripheral nerves may result in decreased sensory and motor function and lead to disability. A tool which enables clinicians to accurately assess the severity of leprosy type 1 reactions would be useful in defining outcomes for clinical trials and facilitating the even distribution of patients with similar disease severity between the arms of clinical trials. A measure of reaction severity could also be used in treatment guidelines to indicate the need for therapy and may be a useful prognostic tool.
A scale was developed and the face and content validity were assessed following consultation with recognised experts in the field. The construct validity was determined by applying the scale to 81 patients in Bangladesh and Brazil who had been diagnosed with leprosy type 1 reaction. An expert categorized each patient's reaction as mild or moderate or severe. Another worker applied the scale. This was done independently. The agreement between two observers (four pairs) using the scale was assessed on 39 participants at a subsequent stage.
The scale had good internal consistency demonstrated by a Cronbach's alpha $>0.8$. Removal of three items from the original scale resulted in statistically significant discrimination between disease severity categories ($P=0.048$). Cut off points for reaction severities were determined using receiver operator characteristic curves. A mild reaction is characterized using the final scale by a score of 4 or less. A moderate reaction is a score of between 4.5 and 8.5. A severe reaction is a score of 9 or more. There was very good inter-observer agreement.
This is the first validated tool for quantifying leprosy type 1 reaction severity.

# 47

## Methodological quality of studies on diagnostic criteria for atopic dermattis: the QUADAS tool

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Atopic dermatitis (AD) is a highly pruritic and chronic inflammatory disease with an increasing prevalence. Since there are no adequate (laboratory) tests to diagnose AD, several lists of diagnostic criteria have been introduced, validated and used in population and hospital based studies over the years. A systematic review (SR) was conducted to summarize all the evidence concerning the validation of diagnostic criteria. Lack of methodological quality of diagnostic validation studies may overestimate the performances of the diagnostic criteria under evaluation. To assess the quality of these studies, a checklist was developed: the Quality Assessment of Diagnostic Accuracy tool (QUADAS). The QUADAS tool uses predefined criteria based on elements of study design, conduct and analysis, which are likely to have a direct relationship to bias in test accuracy studies.
We assessed the methodological quality of studies concerning the validation of diagnostic criteria for AD.
In our SR, 27 studies concerning the validation of 6 diagnostic criteria were included of the 925 articles identified through a Pubmed and Embase search. By using the QUADAS tool for assessment of diagnostic accuracy, it was shown that the methodological quality of the assessed studies differed substantially. Selection criteria, reference standard and index test were well described in all studies, withdrawals and intermediate results were not. Approximately half of the studies showed a lack of blinding, of which there is evidence that it may cause seriously biased results. Another important point of discussion is item 7 of the QUADAS tool. Since the current diagnostic criteria of AD are based on clinical experience and the gold standard is the clinical diagnosis, the results of the index test are used in establishing the final diagnosis. With this, an incorporation bias is inevitable.
We conclude that improvement of methodological design for validation studies is needed to improve future validation studies of diagnostic criteria. The QUADAS is found to be a useful tool to assess methodological quality in diagnostic accuracy studies.

# 48

## Prevalence of inflammatory acne in Ghanaian schoolchildren

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We aimed to investigate the prevalence of inflammatory acne vulgaris in children and adolescents who are living in rural and urban areas in Ghana in relation to the age, sex, body mass index and socio-economic status of the children.
A total of 1,394 children and adolescents attending 6 rural and 5 urban schools in the Greater Accra Region were examined for inflammatory acne vulgaris. Baseline characteristics, such as age, sex, length, weight, and socio-economic status were collected by physical examination and questionnaire. Logistic regression analyses were performed to estimate the effect of potential risk factors on the development of inflammatory acne vulgaris.
Inflammatory acne vulgaris was found in 4,7% in de total group en 6% in the age group 9–20 years. In the rural schools only 1 child had inflammatory acne, compared to 65 (10.1%) out of 641 children in the urban schools ($P<0.001$). The risk with 95% confidence interval, adjusted for age and body mass index, of girls compared to boys to develop inflammatory acne was 3.0 (1.6–5.2). The risk to develop inflammatory acne adjusted for age and sex for children with a high body mass index was 3.0 (1.7–5.8) and for children with a low body mass index 0.181 (0.22–2.0) compared to children with a normal body mass index, respectively.
The prevalence of inflammatory acne vulgaris in Ghanaian schoolchildren and adolescents ranged between 0.1% in rural and 10.1% in urban areas. Age, female gender, high body mass index and living in an urban area were the main risk factors associated with an increased risk of inflammatory acne vulgaris.

## 49

### Design and reporting of randomised controlled trials on treatments for cutaneous leishmaniasis

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The aim of the study was to assess the design and reporting of randomised controlled trials (RCTs) evaluating treatments for cutaneous leishmaniasis, one of the most serious skin diseases in many developing countries.
We assessed 49 and 39 RCTs included in a Cochrane systematic review evaluating treatments for Old World (1) and American cutaneous leishmaniasis (2) respectively. Adequate randomisation method was reported in 35% (17/49) and 28% (11/39) respectively. Only 14% (7/49) and 13% (5/39) had an adequate reporting of allocation concealment. Double-blinding was found in 41% (20/49) and 39% (15/39) studies. Inadequate baseline characteristics description was found in 12% (6/49) and 3% (1/39) studies. Sample size calculation was reported in 27% (13/49) and 13% (5/39) studies. Only one study in each review clearly assessed the compliance. The causative parasite was not mentioned in 25% (12/49) and 5% (2/39) of the studies and 37% (18/49) and 13% (5/39) of the trials mentioned the endemic nature of the parasite in the area assuming that was the species causing the disease. The timing for outcome assessment was not reported in 4% (2/49) and 3% (1/39) of the trials.
The evidence base for the treatment of CL has many limitations and is characterised by poor quality of reporting and design of the trials. Because resources are limited for clinical research into neglected major public health problems there is a need for prioritising and executing properly designed clinical trials. It is aslo essential that submitted journal manuscripts undergo rigorous peer-review.

[1] González U, Pinart M, Reveiz L, Chan M, Alvar J (2005) Interventions for Old World cutaneous leishmaniasis. *Cochrane Database of Systematic Reviews*, Issue 1.
[2] González U, Pinart M, Rengifo-Pardo M, Macaya A, Tweed JA, Chica C, Alvar J (2004) Interventions for American cutaneous leishmaniasis. *Cochrane Database of Systematic Reviews*, Issue 3.

## 50

### Is herpes zoster associated with TNF-antagonists therapy in rheumatoid arthritis? Comparison of biobadaser and emecar cohorts

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TNF antagonists (TNFA) have been increasingly used with many indications, including rheumatoid arthritis (RA) and psoriasis. The risk of herpes zoster associated with TNFA is uncertain.
Our aim was to compare the incidence of herpes zoster in two prospective cohorts of RA patients, one treated with TNFA (BIOBADASER) and the other not exposed to ''biological'' therapies (EMECAR).
Biobadaser is a Spanish registry for active long-term follow-up of safety of biological treatments in rheumatic disease in adults. It included 5,315 patients with RA that had received TNFA. EMECAR is a cohort study ($n=778$) describing comorbidity in adults with RA, in the same setting. Inclusion criteria and outcomes to describe were similar in both cohorts, except for the use of biological drugs. Median follow-up times were 1.8 years for BIOBADASER and 3.2 for EMECAR.
We found 79 cases of herpes zoster in BIOBADASER (11,604 py), and 6 cases in EMECAR (2,153 py). We do not have data on severity of herpes zoster. Crude incidence rate ratio of herpes zoster in the cohort treated with TNFA was 2.44 (95% CI 1.07–5.60), and the absolute risk difference was 4.02 cases per 1,000 py (95%CI 1.3–6.7).
We controlled confounding by indication using propensity scores, which included data on age at start of disease, gender, duration of disease, and disease severity (DAS28). This had some limitations because of missing data, which made matching of the dataset not ideal. After this adjustment, rate ratio was 3.47 (95%CI 1.27–9.47).
RA patients on TNFA therapy might have a slightly increased risk of herpes zoster. Limitations of our study include incomplete control of confounding factors.

## 51

### Comparison of sun protection behaviours among metropolitan and non-metropolitan health regions

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Because skin cancer is highly associated with ultraviolet radiation, public education programs have aimed to reduce skin cancer through decreasing sunlight exposure. In the present study, the sunburn rates and sun protection behaviours were compared between metropolitan Canadian health regions in Alberta and Prince Edward Island *versus* non-metropolitan health regions in those provinces.
The Canadian Community Health Survey Cycle 3.1 (2006) was conducted by Statistics Canada, and 13,574 individuals responded to the sun exposure module. The primary outcome of sun exposure included the presence of sunburn, and secondary outcomes of sun protection behaviors were measured. These variables were compared between health regions that differed by their metropolitan status: a metropolitan region was defined as having a population greater than 500,000. Simple logistic regression analysis was performed and those variables that were statistically significant were offered to multiple logistic regression analysis.
The prevalence of experiencing a sunburn in the preceding twelve months was significantly higher in the non-metropolitan (37.67%) as compared to the metropolitan health region (32.38%) yielding a crude odds ratio of 1.20 (95%CI: 1.11–1.31). In addition, respondents from the non-metropolitan health region spend a greater amount of time in the sun from 11am to 4pm (1.15, 95%CI: 1.05–1.26), and applied sunscreen to their face less frequently (1.39, 95%CI: 1.27–1.53). They were less likely to wear hats seldomly (0.87, 95%CI: 0.79–0.95).
In a representative Canadian population, non-metropolitan health regions in Alberta and Prince Edward Island had higher rates of sunburns compared to metropolitan health regions such as Calgary and Edmonton. This effect was independent of age, sex, marital status, education, having a regular doctor and ethnicity. This discrepancy in outcomes and behaviours according to population size if confirmed in larger scale studies, would be important factors to consider in optimizing the effectiveness of public education and primary prevention.

## 52

### Solar elastosis is associated with improved survival in melanoma patients who develop regional lymph node metastases

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Recent work has indicated that solar elastosis in the skin surrounding a primary melanoma may be related to a decreased likelihood of metastasis. However, we know of no studies examining whether solar elastosis may be an important marker for improved survival in patients who have already developed metastases. We examined elastosis and 14 other clinical and microscopic characteristics in 235 patients who developed regional lymph node metastases following definitive treatment of their primary melanoma. 157 (66.8%) patients were male, with a mean age at time of metastasis of 53.5 years (standard deviation [SD] = 16.1 years), and mean primary tumor thickness of 2.7 mm (SD = 1.9 mm). Both Kaplan–Meier survival curves and Cox proportional hazards regression were used for analysis.
Of the 235 patients in the study, 159 (67.7%) died from melanoma. Following development of lymph node metastases, the median time to death for patients who died of melanoma was 1.6 years, and the median length of follow up for patients who did not die of melanoma was 7.6 years. Multivariate analysis revealed that increased amounts of solar elastosis (moderate or severe *versus* none, HR = 0.3, 95% CI: 0.2, 0.6), fewer involved nodes (HR for each 1- lymph node decrease = 0.9, 95% CI: 0.9, 0.99), thinner primary tumor ($\leqslant$1 mm *versus* >1 mm, HR = 0.6, 95% CI: 0.3, 0.98), absence of ulceration in the primary tumor (HR = 0.6, 95% CI = 0.4, 0.9), and extremity as the primary tumor site (extremity *versus* axial, HR = 0.7, 95% CI: 0.5, 0.99) were each independently associated with longer survival. Having tumor-infiltrating lymphocytes surrounding the primary tumor had borderline statistical significance (HR = 0.7, 95% CI: 0.5, 1.04, $P=0.08$). The length of disease free interval preceding lymph node involvement and mitotic rate of the primary tumor were not associated with improved survival. We have identified important prognostic characteristics for melanoma patients who develop regional lymph node metastases, including a new prognostic characteristic, elastosis, that has never been studied previously. This study indicates that solar elastosis may be an important marker for melanoma outcomes in this population.