512 Systematic review of pharmacogenomics in psoriasis
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Pharmacogenetic and pharmacogenomic studies have investigated biomarkers of drug efficacy and toxicity in psoriasis, yet none have translated into clinical care. We performed a systematic review of publications assessing the influence of genetic variability on treatment response in psoriasis patients. Studies were included where: participants had a diagnosis of psoriasis; a genomic test was performed; response to treatment was documented with a defined outcome measure and treatment response was correlated with the genomic test. Four electronic databases were searched from inception to August 2012. In total 27,203 abstracts were scanned, from which 121 full papers were evaluated, only 45 studies, published between 1995 and 2012, met inclusion criteria. Thera-
pies evaluated included included 9 topical, 1 phototherapy, 8 systemic, 19 biologic and 3 novel immunother-
apies. Of the 26 pharmacogenetic and 19 pharmacogenomic studies, only 2 reported undertaking a sample size calculation before patient recruitment. A positive association with efficacy or toxic-
ity was reported in 21 studies. Sources of heterogeneity included: poor phenotyping of participants; failure to define treatment response using validated methodology; time-
ing of measurement and documentation of participants’ concurrent therapies. Key qual-
ity metrics were the number of participants/gene tested, the ratio of patients with/without geno-
type, and the power to detect an association. Our study suggests that ongoing quality improve-
ment of genomic research in psoriasis is essential in order to translate findings into clinical care.

513 Hospitalizations for cellulitis in Canada: A retrospective database study
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Molluscum Contagiosum (MC), a member of the poxvirus family, is a viral disorder of the skin and mucous membranes characterised by discrete, single or multiple flesh coloured papules. The virus can lead to discomfort and pain, in children there can also be symptoms of pruritus, erythema, inflammation and super infections in some cases. Lesions are diagnosed upon sight due to their dis-
tinct appearance, in unusual and rare cases they may be referred for biopsy. This study aims to design a self diagnostic tool for parents. A two phased approach was conducted, firstly nine dermatolo-
gists were interviewed to establish the key diagnostic features of MC. Interviews were tabulated and grouped by key themes. Medical illustrations were selected, and dermatologists were asked to choose those which were most representative of typical lesions. The tabulated findings from inter-
views were then discussed with a patient representative, dermatology specialist and school nurse to produce clear wording in a lay language, also maintaining the key diagnostic elements. The sec-
ond phase of the study piloted a draft version of the MCDTP at a local parent group (n=10) to deter-
mine whether it was clear and understandable. The following themes emerged: the tool was adequate for the diag-
nosis of MC in children. The authors specifically designed this tool as a recruitment aid for a child-
hood cancer research study. The tool is an easy to use and understand self-diagnostic tool for parents.

514 Association between the type and length of tumor necrosis factor (TNF) inhibitor therapy and myocardial infarction (MI) risk in psoriasis
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We investigated whether the type of TNF inhibitor therapy (soluble receptor versus monocular antibody) has an effect on the association of MI risk, and determine whether length of TNF inhibitor therapy has an effect on the association of MI risk. This was a retrospective cohort study from Jan-
uary 1, 2004 and November 30, 2010 at least 1 ECDP codes for psoriasis (J04.0-1) and psoriatic arthritis (J06.0-1) without antecedent MI. In the 3 subgroups of TNF inhibitors, 976 received etaner-
cept only, 217 received monoclonal antibody only, and 480 received etanercept plus monoclonal antibody. In the Cox proportional hazard analysis, etanercept only (HR, 0.55, 95% CI, 0.31-0.92) was associated with a significant reduction of MI risk compared to topical agents, and monoclonal antibody only (HR, 0.53, 95% CI, 0.31-0.92) and etanercept plus monoclonal antibody (HR, 0.50, 95% CI, 0.27-1.06) were associated with a non-significant reduction of MI risk compared to topi-
cal agents. Using year 1 as reference, those who received TNF inhibitor therapy at year 2 (HR, 0.71, 95% CI, 0.48-1.09), year 3 (HR, 0.52, 95% CI, 0.32-0.85) and year 4 (HR, 0.45, 95% CI, 0.25-0.82) had a non-significant decreased risk of MI compared to topical agents. Treatment with etanercept compared to treatment with topical agents was associated with a significant decreased risk of MI in postmenopausal patients. Treatment with biologic agents only (HR, 0.54, 95% CI, 0.31-0.95) and etanercept plus monoclonal antibody compared to treatment with topical agents, was associated with a non-significant decreased risk of MI in psoriasis patients. There was a trend that those treated with TNF inhibitors at year 1 or 4 had a non-significant increased risk of MI compared to those who were treated with TNF inhibitors at year 1.

515 Designing the ‘molluscum contagiosum diagnostic tool for parents’ (MCDTP) for children
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The objective of this study was to investigate the association between alcohol intake and the inci-
dence of cutaneous squamous cell carcinoma (cSCC). Multivariate Cox survival models with time-
dependent exposure and covariates were used to estimate relative risks (RRs) and 95% confidence intervals (CIs) in three separate cohorts of U.S. women and men. The results were then meta-analy-
ized. A total of 174,988 women and 48,140 men participating in the Nurses’ Health Study, Nurses’ Health Study II and Health Professionals’ Follow-up Study were followed for up to 28 years. Interm-
nal alcohol intake and cSCC was collected at baseline and updated several times dur-
ing the follow-up. During a follow-up of 4,324,416 person-years, 2,938 histopathologically verified, incident invasive cSCC and 1,790 cSCC in situ were identified. Alcohol intake was significantly associated with an increased risk of invasive cSCC in all three cohorts. A significant dose-response relationship was observed: each additional drink (12.8 gram of alcohol) per day was associated with 22% increased risk of invasive cSCC (RR 1.22, 95% CI 1.13-1.31) and with 14% increased risk of cSCC in situ (RR 1.14, 95% CI 1.04-1.24). White wine consumption ≥5 times a week was signifi-
cantly associated with an increased risk of invasive cSCC (RR 1.31, 95% CI 1.09-1.59). The results of this large prospective cohort study indicate that a moderate consumption of alcohol increases risk of developing cSCC in a dose-dependent manner. Our results are still to be replicated in oth-
er large cohorts.

516 Thanaka and its dermato logical use in Myanmar (Burma)
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Recent geopolitical changes in Myanmar have resulted in new opportunities to study skin health and disease in a previously isolated population. This cross-sectional study investigated the derma-

tologic uses of thanaka in Myanmar. Used by Burmese people for over 2,000 years, thanaka pow-
der is produced by grinding the bark of Hymenaea conophora or Nuxia cumini. On a round slab called a kyauk pyin. The powder is then mixed with water to form a thin yellow paste that is applied directly to the skin. We conducted semi structured interviews with 25 Burmese women who wear thanaka. Participants were both men and women, age 12-55, and represented three different regions of Myanmar. Nine distinct dermatologic uses were identified: photoprotection, acne treatment and prevention, skin lightening, skin cooling, aesthetics (make-up), rhytid reduction, pru-

517 Alcohol intake is associated with increased risk of squamous cell carcinoma of the skin: Prospective cohort study
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The objective of this study was to investigate the association between alcohol intake and the inci-
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cantly associated with an increased risk of invasive cSCC (RR 1.31, 95% CI 1.09-1.59). The results of this large prospective cohort study indicate that a moderate consumption of alcohol increases risk of developing cSCC in a dose-dependent manner. Our results are still to be replicated in oth-
er large cohorts.
518 Excellent reliability and validity of a novel Epidemiology Bullous Disease Activity and Scar- ring Index (EBDASI) compared to two other outcome measures

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Current outcome measures for epidermolysis bullosa (EB) do not distinguish disease activity from damage, hence they cannot measure changes from interventions well in clinical trials. We aimed to devise an Epidemiology Bullous Disease Activity and Scarring Index (EBDASI), which could score activity separately from scarring and to compare its reliability and validity with the Birmingham EA Score (BES), using the Physician’s Global Assessment Scale (PGA) as a reference measurement. Content validity was established by including all possible physical complications of EB, and the methodology from the previously validated Pemphigus Disease Area Index was adapted to create the EBDASI. To determine the inter-rater reliability and validity of the EBDASI, 20 raters were trained and the index was scored by the participating raters on 10 severely affected patients, with a total of 374 EB data points. The EBDASI demonstrated excellent reliability and validity, and was found to be superior to BES. As EBDASI measures activity separately from scarring, it should be a very useful outcome measure for trials of novel therapies in EB.

519 Demographic genotyping of six topical dermatitis and 180 autoimmune skin disease loci in 2,425 dermatology patients

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Autoimmune dermatitis (AD) is one of the most common chronic inflammatory skin diseases, with a polygenic, multifactorial nature. To date, genome-wide association studies have established six susceptibility loci. However, the causal variation at these loci remains unknown. To better define risk variants, we performed an additional susceptibility loci previously implicated in other autoimmune (AI) diseases, in 2,425 German AD cases and 5,449 German population controls. In a genome-wide association study, we identified two novel AI disease loci (P<0.05) in 5,449 German population controls. These novel loci were not associated with AD in a genome-wide association study, and the causal variation at these loci remains unknown.
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Second primary malignancies in patients with history of soft tissue tumors from the SEER database.

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We sought to determine risk of subsequent primary malignancies after soft tissue tumor (STT) diagnosis. The Surveillance, Epidemiology, and End Results (SEER) database was used to compare the risk of STTs developing subsequent primary malignancies (SPMs) compared to the general population. STTs and SPMs were classified according to guidelines provided by the World Health Organization (WHO), which categorized STTs as follows: vascular, perivascular, skeletal muscle, adipocytic, chondro-osseous, fibrohistiocytic, or skeletal muscle, and uncertain differentiation. Of the 2,109,400 patients diagnosed with STTs and 5,109,730 patients with SPMs, 3,445 developed non-melanoma skin cancer (NMSC). 2335 developed 5 SPM, 253 developed 2 SPMs, and 13 developed 3 SPMs. Besides second primary STTs, other cancer sites with a significantly increased risk (OR) were non-epithelial skin cancers (1.32, 95% CI: 1.32–1.35), melanoma (2.14, 95% CI: 1.91–2.39), and other non-epithelial skin cancers (2.32, 95% CI: 1.32–3.59). The risk of non-Hodgkin lymphoma (extranodal) (1.14, 95% CI: 1.08–1.27) and acute myeloid leukemia (AML) (2.79, 95% CI: 2.67–2.88) was also increased. The risk of developing subsequent primary malignancies in STT patients was significantly higher in the moderate to severe group (HR: 1.94, 95% CI 1.83 – 2.06) and not observed in the mild group (HR: 1.00, 95% CI 0.97 – 1.03). The increased risk was confined to the moderate-severe part. The ratio (HR): 1.05, 95% CI 1.03 – 1.08. In contrast, the incidence of melanoma was pathologically confirmed. We calculated the Hazard Ratios (HRs) of melanoma associated with history of prostate cancer. To address the potentially increased surveillance among those with history of prostate cancer we evaluated the risk of NMSC by history of prostate cancer, as well as risk of melanoma by history of other cancers. We identified 540 melanoma cases from 1986 to 2010. Personal history of prostate cancer was associated with a significantly increased risk of melanoma with a multivariate-adjusted HR of 1.81 (95% CI: 1.30-2.50). Although we also observed a slightly increased risk of NMSC by history of prostate cancer (HR=1.13, 95% CI=1.05-1.22), the difference was not statistically significant (HR: 1.05, 95% CI: 0.95–1.12), and none of the secondary neoplasms considered developed after a perivascular STT. This study showed that there was an increased risk of SPM after STT diagnosis and treatment. The excess risk was specific to each secondary cancer site.

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Milk: An endocrine mTORC1 driving anabolic signal transduction system of mammalian translation promotes diseases of Western civilization like acne

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Recent epidemiological evidence points to an association between increased body mass index (BMI) and risk of acne, eczema, psoriasis as well as melanoma and nonmelanoma skin cancer. Increased BMI is the clinical correlate of enhanced activity of the nutrient-sensitive kinase mTORC1 (mammalian target of rapamycin complex 1). Western diet, typically composed of high glycemic load and high milk and dairy product consumption, is closely linked to high BMI and metabolic aberrations, especially insulin resistance. Milk, the growth-promoting feeding system of mammals, produced by the well-considered mammalian lactation genome, functions as a signal transduction system driving anabolic mTORC1 signalling. Milk fulfills its biological function by providing highly functional branched-chain amino acids and its intrinsic ability to raise insulin and IGF-1 plasma levels, which are important activators of mTORC1, the central cellular promoter of cell growth and proliferation and suppressor of autophagy. Age-related diseases of Western civilization have recently been recognized as mTORC1-driven diseases, especially obesity, type 2 diabetes mellitus and cancer. Thus, milk/mTORC1-driven metabolic aberrations may not only play a pivotal role in the pathogenesis of acne but also likely in the development of other common dermatological diseases, especially eczema, psoriasis, and melanoma and nonmelanoma skin cancer.

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Personal history of prostate cancer and increased risk of incident melanoma in US men

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Steroid hormones, particularly androgens, play a major role in prostatic carcinogenesis. Personal history of severe acne has been associated with an increased risk of prostate cancer. One recent study indicated severe teenage acne as a novel risk factor for melanoma, suggesting a possible relationship between the history of prostate cancer and risk of melanoma. We prospectively evaluated the association between prostate cancer and risk of subsequent melanoma among U.S. men. 434,420 participants were included from the Health Professionals’ Follow-Up Study over a 24-year period. Prostate cancer diagnosis was confirmed using pathology reports. Skin cancers, including melanoma and nonmelanoma skin cancer (NMSC), were reported biennially and the diagnosis of melanoma was pathologically confirmed. We calculated the Hazard Ratios (HRs) of melanoma associated with history of prostate cancer. To address the potentially increased surveillance among those with history of prostate cancer, we evaluated the risk of NMSC by history of prostate cancer, as well as risk of melanoma by history of other cancers. We identified 540 melanoma cases from 1986 to 2010. Personal history of prostate cancer was associated with a significantly increased risk of melanoma with a multivariate-adjusted HR of 1.81 (95% CI: 1.30-2.50). Although we also observed a slightly increased risk of NMSC by history of prostate cancer (HR=1.13, 95% CI=1.05-1.22), the difference was not statistically significant (HR: 1.05, 95% CI: 0.95–1.12), and none of the secondary neoplasms considered developed after a perivascular STT. This study showed that there was an increased risk of SPM after STT diagnosis and treatment. The excess risk was specific to each secondary cancer site.

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Evaluation of ACC, IUCC, and Brigham and Women’s Hospital tumor staging for cutaneous squamous cell carcinoma

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Although most cutaneous squamous cell carcinomas (CSCC) have an excellent prognosis, there is a high-risk subset with an increased risk of metastasis and death. However, high-risk CSCC has not been consistently defined, nor associated prognosis estimated. Therefore, clinicians currently have little evidence to guide decisions regarding nodal staging and adjuvant therapy. The present study was undertaken to evaluate the 2010 American Joint Committee on Cancer (ACC), 2010 International Union Against Cancer (UICC), and 2013 Brigham and Women’s Hospital (BWH) tumor (T) staging systems for cutaneous squamous cell carcinoma (CSCC). Primary CSCCs diagnosed 2000-2009 at BWH (n=1,818) were assigned ACC, IUCC, and BWH T stages. Life tables of poor outcomes (local recurrence, LR, nodal metastasis, NM, and disease-specific death, DSD) were constructed and analyzed. In ACC staging, poor outcomes were clustered in T2 with 72% of LR, 82% of NM, 67% of DSD occurring in T2 stages. In UCC staging, most poor outcomes occurred in T1 and T2 including 81% of LR, 67% of NM, and 70% of DSD. In BWH staging, only 6% of CSCCs were in the upper 2 stages (T2b and T3) but they accounted for the majority of LR, NM, and DSD (53%, 76%, and 83% respectively). While ten year incidences of LR, NM, and DSD were low for low-stage tumors (BWH T1/T2a: 1.5% (1-2%), 0.5% (0-1%), and 0.2% (0-0.5%) respectively, they were significantly higher for high-stage cases (BWH T2b/T3: 23% (16-31%), 23% (16-31%) and 13% (8-21%) respectively). UCC and ACC staging for CSCC may be suboptimal as most poor outcomes occur in low T stages (T1 and T2). In BWH staging, the majority of poor outcomes occur in the 6% of tumors that are T2b/T3. These stages define a high-risk group which may be the basis of further study of staging and adjuvant therapy.
High compliance but low persistency within 12 months with systemic and biologic treatments in Sweden

The purpose of this study was to analyze treatment patterns of systemic (Syn) and biologic (Biol) therapies for psoriasis (PsO) patient in Sweden. In this retrospective study, a cohort of adults with a 1:CD-10 diagnosis of PsO (410.3)1 was identified from two regional registries, Skin Health Care Register (SHCR) and VEGA, with a combined coverage of 2.8 million people (~30% of the Swedish population). Data included all primary and secondary care visits, and all prescriptions dispensed in Sweden from July 2005 – Sept. 2011 from the National Prescription Registry. Compliance (adherence) was measured as the number of days covered by prescriptions while patients were on treatment divided by the duration (in days) from initiation to discontinuation of treatment. Persistency on treatment covered the duration of time from initiation to discontinuation of treatment; patients were allowed to have gaps between filled prescriptions, but were defined as non-persistent if they had a gap >60 days (the “grace period”). For Biol therapies, an undesirable treatment effect was defined to occur at (1) up-titration of dosage, (2) augmentation with phototherapy, or (3) subsequent treatment failure. Persistency and adherence for all patients were defined as (1) >0.90 adherence (≥80% of the planned treatment) for those who had a “grace period” (no gaps), and (2) adhered (≥0.80 of the planned treatment) for those with gaps between treatments.

Prevalence of ARCI was calculated using the three-source capture-recapture method (all types), the molecular genetic data base RoughSkin of the Köln center for genomics providing homologs to these organizations and did increase patient registrations for patient advocacy organizations, especially for the more common skin diseases.

Except for Spain and Sweden no reliable data are available for prevalence of autonomous recessive congenital ichthyosis and of transglutaminase-1 deficiency in Germany: Calculation of estimates using the three-source capture-recapture method T. Hart, H. Henniges, V. Op, J. Schmidmaier, K. Klebsch, B. Klinow, K. Aullennem, T. Ockert, E. Troup, 1 Institute of Medical Biometry, Epidemiology and Informatics, University of Mannheim, Mainz, Germany, 2. Cologne Center of Genomics, University of Köln, Köln, Germany, 3. Department of Dermatology, University of Münster, Münster, Germany, 4. Düsseldorf University Hospital, Patient Organisations, Mülheim/Ruhr, Germany. This project was funded by the BMBF and the ARCI patient advocacy organizations.

The prevalence of autistic recessive congenital ichthyosis and of transglutaminase-1 deficiency in Germany: Calculation of estimates using the three-source capture-recapture method T. Hart, H. Henniges, V. Op, J. Schmidmaier, K. Klebsch, B. Klinow, K. Aullennem, T. Ockert, E. Troup, 1 Institute of Medical Biometry, Epidemiology and Informatics, University of Mannheim, Mainz, Germany, 2. Cologne Center of Genomics, University of Köln, Köln, Germany, 3. Department of Dermatology, University of Münster, Münster, Germany, 4. Düsseldorf University Hospital, Patient Organisations, Mülheim/Ruhr, Germany. This project was funded by the BMBF and the ARCI patient advocacy organizations.

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Low dose aspirin is not associated with a decreased incident skin cancer risk: A population-based case-control study in 1.2 million Dutch inhabitants

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Objective: To investigate the protective effect of low dose aspirin (a 100 mg daily) on skin cancer in the Dutch general population. Methods: We conducted a population-based cohort study with detailed information on aspirin exposure and cancer incidence using the linkage between PHARMOS and the Eindhoven Cancer Registry, including inhabitants from 1998 and 2010 above 18 years and free of cancer at baseline. A Cox model with cumulative low dose aspirin use as a time-varying determinant was used to obtain adjusted hazard ratios (HR). Results: We included 1,063,327 non-users and 112,491 new low dose aspirin users with a mean follow up of 9.8 and 11.0 years, respectively. Ever use should not affect skin cancer risk, but was associated with an increased risk of all skin cancers. This could be due to residual confounding and therefore we performed subsequent analyses in new low dose aspirin users. Additional years of low dose aspirin use were not associated with a decreased risk of melanoma (HR per additional year of aspirin use: 1.06, 95% confidence interval [CI] 0.96-1.17), basal cell carcinoma (BCC) (HR 1.07, 95% CI 1.01-1.15) or squamous cell carcinoma (SCC) (HR 1.00, 95% CI 0.90-1.00). Low dose use (≥6 years) was also associated with a decreased risk compared to short-term use (<2 years) for all types of skin cancer (melanoma 1.11, 95% CI 0.61-2.79; BCC HR 1.24, 95% CI 1.05-1.43; SCC HR 1.02, 95% CI 0.90-1.16). Low dose aspirin use was not associated with a decreased risk of skin cancer in the Dutch general population.

Effectiveness of less commonly used systemic monotherapies and combination therapies for moderate to severe psoriasis in real world settings: results from the Dermatology Clinical Effectiveness Research Network (DCERN)

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Previous studies have demonstrated a lack of agreement in counting actinic keratosis (AKs) among dermatologists. We sought to determine whether cumulative consensus discussions held yearly for 4 years, could improve agreement among dermatologists counting AKs. A prospective, single blinded study was conducted at 47 VA Medical Centers (VA-MCs) across 9 states. 70% confidence intervals (CIs) were calculated for Year 1 (2010; n=15). AK counts were conducted for 4 years (Year 2, 2011; n=16; Year 3, 2012; n=17; Year 4, 2013; n=18). Interobserver agreement was measured using Cohen’s weighted kappa (κw). Mean counts were tabulated. A post-hoc power analysis was conducted. A total of 295 low-risk subjects were examined during Year 1. Nine subjects were examined during Year 2, and 3 subjects were examined during Year 4. There was consistent improvement in the level of agreement among dermatologists over the 4 years. Interobserver agreement observed in Year 1 was 0.18, Year 2 0.27, Year 3 0.34, Year 4 0.70 (p=0.02). Post-consensus data was not available for Year 1. Post-consensus ICSs for Year 2, 1 and 4 were 0.53, 0.58 and 0.75, respectively (p>0.01). These findings suggest that improved precision of counting AKs can be achieved and sustained with yearly consensus discussions.
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ABSTRACTS

542 Lower serum vitamin D levels are associated with increased risk of eczema in US adults
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Vitamin D’s immunoregulatory properties may play a role in development and severity of allergic conditions. Research indicates an inverse relationship between vitamin D levels and severity of eczema in children, and some studies show improved eczema symptoms following vitamin D supplementation and phototherapy. We sought to determine the association between serum vitamin D levels and eczema in US adults. The 2005-2006 National Health and Nutrition Examination Survey included measurement of serum 25-hydroxyvitamin D (25(OH)D) levels and questions about eczema. We used logistic regression to evaluate the relationship between vitamin D levels and eczema status in subjects aged 19-49 years (N=2,819). We categorized subjects as never, ever, and recently having eczema. Serum 25(OH)D levels (<20 ng/mL, 20.1-29 ng/mL, > 30 ng/mL) were categorized as deficient, insufficient, and sufficient, respectively. We adjusted for age, race, gender, BMI, season of blood draw, poverty index ratio, milk intake, multivitamin use, television and computer use, physical activity, and sun exposure, and stratified subjects by age group. Overall there was a significantly increased risk of having eczema (OR 2.66, 95% CI: 1.47-4.81), and vitamin D insufficiency was associated with recent eczema (OR 2.93, 95% CI: 1.00-8.58) and ever eczema (OR 1.87, 95% CI: 1.03-3.17). Among 19-49 year-old adults, vitamin D deficiency was associated with recent eczema (OR 1.80, 95% CI: 0.92-3.49) and ever eczema (OR 1.30, 95% CI: 0.69-2.45) compared with those with sufficient levels. Among 50-64 year-old adults, vitamin D deficiency was associated with recent eczema (OR 1.61, 95% CI: 0.92-2.81) and ever eczema (OR 0.69, 95% CI: 0.45-1.07). Among those 65+ years, vitamin D deficiency was associated with recent eczema (OR 2.77, 95% CI: 0.88-8.66). Trends toward similar associations were also seen in older age groups. Limitations include a lack of information on vitamin D supplementation level in this population study. In conclusion, vitamin D insufficiency and deficiency is associated with increased eczema risk, especially in young adults. Further investigation on the effects of vitamin D supplementation on eczema in this population is warranted.

543 Association between ultraviolet flux and risk of invasive cutaneous squamous cell carcinoma in the United States
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Previous measures of self-reported ultraviolet radiation exposure have been fraught with concerns about recall bias. Ultraviolet flux of residence provides an estimate of ultraviolet radiation exposure on the Earth's surface, serving as a surrogate marker for ambient ultraviolet radiation exposure based on an individual's residence history. In this study, we investigated the association between UV flux of residence and risk of invasive squamous cell carcinoma among US men. In particular, we estimated the cumulative UV flux of residence as the sum of UV flux to which an individual was exposed based on their reported state of residence. Information on 47,819 male participants with follow-up over 20 years was included from the Health Professionals follow-up Study. In multivariate models adjusting for known skin cancer risk factors, higher quintiles of cumulative UV flux were associated with an increased risk of invasive SCC in comparison to the lowest quintile (relative risk of invasive SCC: 2.86 (95% CI: 1.52, 5.43) in the highest quintile, p-value for trend<0.0001). We also evaluated using cumulative UV flux and found a similar dose-response relationship between adult cumulative UV flux of residence and the risk of invasive SCC despite adjustment for all known SCC risk factors.

544 Increasing incidence of bullous pemphigoid in Finland
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Bullous pemphigoid (BP) is the most common autoimmune blistering skin disease. In studies based on clinical samples the incidence of BP has varied between 2.5-27.1 per 1 000 000 inhabitants per year (IPY). We conducted a national prospective registry in the Northern Ostrobothnia Hospital District to report the incidence of BP in Finland and whether it has increased also in Finland. The study material consisted of all bullous pemphigoid patients diagnosed in the Oulu University Hospital between years 1985-2009. The data of the disease was collected from the patient records. The diagnosis of BP was evaluated with the following criteria: clinical features, histopathological and immunofluorescence (IF) examinations of skin biopsies, indirect IF analysis and BP180-ELISA. The statistical analyses were performed in STATA (Data Analysis and Statistical Software, version 13.1). The annual incidence rate of BP between 1985-2009 was 2.77 per 100 000 inhabitants (95% CI: 1.97-3.95) and ever eczema (OR 2.77, 95% CI: 0.88-8.66). Trends toward similar associations were also seen in older age groups. Limitations include a lack of information on vitamin D supplementation level in this population study. In conclusion, vitamin D insufficiency and deficiency is associated with increased eczema risk, especially in young adults. Further investigation on the effects of vitamin D supplementation on eczema in this group is warranted.

545 Surgical excision versus imiquimod 5% cream for basal-cell carcinoma (SINCS): A multi-centre non-inferiority randomised controlled trial
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Basal cell carcinoma (BCC) incidence is increasing worldwide. Imiquimod cream may be useful for small or flat BCC situated in low risk body sites but it has not been compared head to head with standard excisional surgery. We conducted a non-inferiority randomised controlled trial comparing imiquimod 5% cream with surgical excision of a 4cm margin in 501 participants with primary nodular or superficial BCC. Primary outcome was the proportion of participants with clinical evidence of “success”, defined as absence of initial treatment failure or signs of local recurrence at Year 2. A dose analysis was undertaken to see if non-inferiority was maintained between imiquimod treated compared to surgery whereas less pain was experienced with imiquimod than surgery during the follow-up period. There was no significant difference in cosmetic appearance when rated by participants, but a difference in favour of imiquimod was noted by dermatologists from photographs. There were fewer treatment failures in the surgery group compared with imiquimod and little difference in cost between them. Imiquimod cream may still be a useful treatment option in primary care for small or low risk superficial or nodular BCC, depending on patient preference.

546 Epidemiology of cutaneous lymphoma in Japan: A nationwide study of 1,871 patients
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Most epidemiological surveys on cutaneous lymphomas (CLs) have been limited to case series reports, mainly of single medical centers. Therefore, epidemiologic data of CLs has not been fully evaluated in many parts of the world. To investigate the incidences of various CLs in Japan, using epidemiological data from a nationwide registration system for CLs, and to compare the results obtained from the present study with those from other cohorts. We analyzed the incidence pattern of CLs from 2007 to 2011 in Japan. The present registry covers the entire nation and includes more than 600 dermatological institutes throughout Japan. The 1,871 patients registered included 1,506 patients of CLs from 2007 to 2011 in Japan. The present registry covers the entire nation and includes more than 600 dermatological institutes throughout Japan. The 1,871 patients registered included 1,506 patients of CLs from 2007 to 2011 in Japan. The mean age at the diagnosis was 67.6 years. We diagnosed 24, 48, and 81 BP cases between years 1985-2002, 1985-2005, and 2005-2009, respectively. The crude incidence in the Northern Ostrobothnia Hospital District was 16.9 (95% CI 14.5-19.8)/1 000 000 person-years. Using the European standard population as a reference the age-standardized incidence was 15 (95% CI 12-17)/ 1 000 000 person-years. Using the Euro-
548 Incidence of nonmelanoma skin cancer in patients presenting for routine dermatological care

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We evaluated whether personal history of hypertension, type 2 diabetes (T2D), high cholesterol, or related medication use is associated with risk of incident psoriasis. A total of 162,071 participants were included from the Nurses’ Health Study (NHS, 1986-2008) and Nurses’ Health Study II (NHS II, 1991-2005). Information on personal history of physician-diagnosed hypertension, T2D, high cholesterol, and related medication use was collected biennially during follow-up. Relative risks (RRs) of incident psoriasis were estimated using Cox proportional hazards models adjusting for potential confounders. During 2,218,429 person-years of follow-up, a total of 1,014 incident psoriasis cases were confirmed. Hypertension was associated with an elevated risk of psoriasis among those using anti-hypertensive drugs in the combined analysis (multivariate-adjusted RR = 1.32, 95% confidence interval [CI]: 1.23, 1.42). For women with hypertension, the increased risk was significant for both systolic (RR = 1.34, 95% CI: 1.25, 1.44) and diastolic blood pressure (RR = 1.34, 95% CI: 1.26, 1.42). None of the individual anti-hypertensive drugs were associated with increased risk of incident psoriasis. We conclude that hypertension, and possibly the use of some antihypertensive drugs, may be associated with increased risk of incident psoriasis.

551 Basal cell carcinoma incidence and associated risk factors in US women and men

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There is a paucity of data on basal cell carcinoma (BCC) in the United States as most national registries do not collect information on BCC. In this study, the authors described incidence trends and associated risk factors for BCC in 95,743 US women from the Nurses’ Health Study (1986-2006), and in 44,428 US men from the Health Professionals’ Follow-up Study (1988-2006). A total of 23,943 incident BCC cases were reported during follow-up. Age-adjusted BCC incidence rates increased from 838 cases per 100,000 person-years to 1,322 cases per 100,000 person-years for women, and increased from 727 cases per 100,000 person-years to 1,811 cases per 100,000 person-years for men. Cox proportional hazards analysis identified several strong phototopic risk factors for BCC in both cohorts: family history of melanoma, blonde and red hair color, higher number of extremity moles, higher susceptibility to burn as a child/adolescent, and higher number of lifetime severe/blistering sunburns (per 100 for meta-analysis). The multivariate-adjusted risk ratio for the highest quintile versus the lowest quintile of cumulative midrange ultra violet (UV) flux exposure based on residential history was 3.29 (95% confidence interval [CI]: 2.79, 3.88) in men and 1.99 (95% CI: 1.45, 2.68) in women. In summary, the increase of BCC incidence rate was generally higher in men than in women, and BCC risk was associated with several phenotypic and exposure factors including midrange UV radiation.

552 Hypertension, type 2 diabetes, high cholesterol, related medication use and risk of incident psoriasis in U.S. women

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In this paper, we evaluated whether personal history of hypertension, type 2 diabetes (T2D), high cholesterol, or related medication use is associated with risk of incident psoriasis. A total of 162,071 participants were included from the Nurses’ Health Study (NHS, 1986-2008) and Nurses’ Health Study II (NHS II, 1991-2005). Information on personal history of physician-diagnosed hypertension, T2D, high cholesterol, and related medication use was collected biennially during follow-up. Relative risks (RRs) of incident psoriasis were estimated using Cox proportional hazards models adjusting for potential confounders. During 2,218,429 person-years of follow-up, a total of 1,014 incident psoriasis cases were confirmed. Hypertension was associated with an elevated risk of psoriasis among those using anti-hypertensive drugs in the combined analysis (multivariate-adjusted RR = 1.32, 95% confidence interval [CI]: 1.23, 1.42). For women with hypertension, the increased risk was significant for both systolic (RR = 1.34, 95% CI: 1.25, 1.44) and diastolic blood pressure (RR = 1.34, 95% CI: 1.26, 1.42). None of the individual anti-hypertensive drugs were associated with increased risk of incident psoriasis. We conclude that hypertension, and possibly the use of some antihypertensive drugs, may be associated with increased risk of incident psoriasis.

553 Genital psoriasis is associated with significant impairment in quality of life and sexual functioning

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Although genital involvement can have devastating psychosocial implications for psoriasis patients, few studies have examined predisposing risk factors or its impact on quality of life and sexual functioning. This was an observational, multi-center study of 354 consecutive adult patients with psoriasis recruited using a standardized questionnaire on patient demographics, clinical severity and phenotype, patient quality of life and sexual functioning was collected. 224 patients (63%) had a current and/or previous history of genital psoriasis. 32% reported a worsening of their genital psoriasis after intercourse and 43% reported a decreased frequency of intercourse as a result of their genital involvement. Younger age of onset of psoriasis (p = 0.001) for type 1 versus type 2 psoriasis, more severe disease (p = 0.001) for Psoriasis Area and Severity Index and percentage of body surface area involved; current sculp, nail and flexural involvement were associated with the presence of current genital disease, patients with palmoplantar involvement were less likely to have a history of genital involvement (p = 0.003), while there was no correlation with joint involvement. There was no evidence that patients with current genital psoriasis had a severe impairment in quality of life and sexual health as determined by the Dermatology Life Quality Index (p < 0.001), the Center for Epidemiologic Studies Depression Scale (p=0.07) and the Relationship and Sexuality Scale (p=0.001). This was significant in all categories including frequency, quality and fear of sexual relations. The results of this study highlight the psychosocial impact of psoriasis and emphasize the need for dermatologists to systematically screen all psoriasis patients for the presence of genital involvement and the impact of their disease on sexual health.
554 Determinants of survival in dermatofibrosarcoma protuberans patients developing subsequent primary melanoma

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Recently the research team found patients with dermatofibrosarcoma protuberans (DFSP) to be at increased risk of subsequent primary melanoma, female breast, soft tissue, and other non-epithe- lial skin cancers, and at decreased risk of colon cancer. This study describes survival of DFSP patients stratified by subsequent primary cancer. Data from the Surveillance, Epidemiology and End Results Program’s Registries with dates 1973-2009 were used for analysis. Three cohorts were used: Cohort 1, individuals with DFSP and no secondary cancer; Cohort 2, individuals with DFSP with the fol- low-up primary cancers: female breast, soft tissue, other non-epithelial skin, colon, and melanoma; and Cohort 3, individuals with DFSP and any other secondary cancer. Kaplan-Meier survival analy- ses were performed within each Cohort to assess potential survival differences by age at diagnosis, sex, race, and primary site of the tumor. Skin diseases: completed the DLQI and GQ at stage 1 and 4 other patients were included who had an increased risk of death. For Cohort 2 (N=111), in the multivariable model black race and tumor location on the genitalia were associated with a signifi- cantly increased risk of death. For Cohort 3 (N=208), in the multivariable model tumor location on the upper extremity was associated with a significant increased risk of death. Decreased survival by specific key factors is variable for those with and without secondary cancers after DFSP diag- nosis. Further analyses will tease out these differences.

555 Personal history of psoriasis and the risk of non-melanoma skin cancers

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Background: Some clinical studies have suggested an increased risk of non-melanoma skin cancers among psoriatic patients. However, no large cohort studies have been conducted on personal his- tory of psoriasis and the risk of non-melanoma skin cancers. Objectives: We investigated the asso- ciation between personal history of psoriasis and the risk of incident non-melanoma skin cancers in a mixed retrospective-prospective cohort design. Methods: We obtained data from three large population-based cohort studies in U.S. women and men. All enrolled participants were followed up to 2008. In a total of 188,406 participants, we identified 3,216 individuals with psoriasis. We used cumulative incidence functions and 95% confidence intervals to calculate the relative risks (RRs) and 95% CI for developing non-melanoma skin cancers using logistic regression models. Results: We documented 3,276 incident SCC cases and 19,100 incident BCC cases. Psoriatic patients had a multivariable-adjusted RR of 1.40 (95%CI, 1.09-1.79) for SCC compared with those without psoriasis. The individuals with severe psoriasis are more likely to develop SCC (RR, 1.26 for 3 or more of psoraisis, 95% CI, 1.01-1.50; p for trend, 0.01). However, personal history of psoriasis was not associated with the risk of BCC (RR, 0.95, 95% CI, 0.86-1.11). Conclusion: Our findings document the increased risk of SCC among women with severe psoriasis but not BCC. Psoriasis may share some common immune pathogenesis with SCC. Certain therapeutic regimens for psoriasis may increase the risk of SCC.

556 Minimal Clinically Important Difference (MCID) of the Dermatology Life Quality Index (DLQI) scores and responsiveness to change in inflammatory dermatoses

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The aims of this study were to determine the Minimal Clinically Important Difference (MCID) and responsiveness to change of the DLQI in inflammatory skin diseases. This was a longitudinal study, in the first stage patients attending the dermatology outpatient clinic completed the DLQI and a self-assessed disease severity global question (GQ) on a 0-10 visual analogue scale. At the follow- up stage patients completed the DLQI, the GQ and a global rating of change questionnaire (GRCQ) about the change in their overall quality of life (QoL). GRCQ was used as an anchor to measure the MCID of the DLQI scores with a 15-point scoring system (7-7) to 0. A total of 192 patients (M=117, F=75, T-Cell lymphoma (CTCL) was confirmed to further assess survival differences adjusting for all factors. For all Cohorts (N=1,459), in the univariate analysis, female sex, race, and primary site of the tumor. The patients with severe psoriasis were included who had an increased risk of death. For Cohort 2 (N=111), in the multivariable model black race and tumor location on the genitalia were associated with a significantly increased risk of death. For Cohort 3 (N=208), in the multivariable model tumor location on the upper extremity was associated with a significant increased risk of death. Decreased survival by specific key factors is variable for those with and without secondary cancers after DFSP diag- nosis. Further analyses will tease out these differences.

557 Identification of cutaneous T-cell lymphoma geographic hotspots in Houston metropolitan area

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Cutaneous T-cell lymphoma (CTCL) is a rare cancer with documented incidence of ~4-8 cases per million individuals per year. Currently the pathogenesis of CTCL remains unknown. Previous case reports suggested that this cancer can occur in married couples as well as cluster geographically and in families, therefore raising a possibility that there might be an important external cause. However, to date there are no documented geographic disease hotspots. In the current work we analyzed the demographic data of 1047 patients from Texas that were seen in a CTCL clinic at the MD Anderson Cancer Center during 2000-2012. Our findings document the increased risk of patients in a number of communities within the Houston metropolitan area. Furthermore, our results reveal three communities with CTCL incidence rate of 10-50 times higher than the expected rate. Conclusions: Identification of geographic clustering combined with the discovery of CTCL disease hotspots strongly argues for the existence of yet unknown external cause in triggering this rare cancer. Identification of additional CTCL hotspots around the world will help identify this trigger and will bring us closer to elucidating death and suffering from this disease.

558 Development and validation of teenagers’ Quality of Life (T-QoL) index: A dermatology-specific measure for adolescents

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The aims of this study was to develop and validate a dermatology-specific quality of life instrument for adolescents with skin diseases. The Classical Test Theory (CTT) and Item Response Theory (IRT) were employed to develop this new tool and to conduct its psychometric testing. The initial draft of 18-item questionnaire that used in the development of the T-QoL index was developed and then was reduced by 153 adolescents. Rasch analysis using RUMM 2030 software did not support the validity of the T-QoL as a unidimen- sional measure; factor analysis identified 3 domains. Further 12 items were removed based on Rasch analysis and on CTT, creating the final 18-item questionnaire. Psychometric evaluation was carried out on a new cohort of 206 adolescents (M=115; F=91, age mean±16.2 years). The con- struct validity of the tool was demonstrated by correlation with Skindex-Teen (r=0.81, p<0.0001), the CDLQI (r=0.74, p<0.001), and the QoL-D (r=0.77, p<0.001). T-QoL showed excellent internal consistency with Cronbach’s alpha a=0.90 for the total scale score and 0.85, 0.60 and 0.74 for the 3 domains. Similarly, the test-retest reliability was high in stable subjects (n=31) over a mean inter- val of 2.4 days: Intraclass correlation coefficient (ICC)=0.94 for the total scale and 0.90, 0.76 and 0.81 for the 3 domains. There was a significant change in the total scale score in 41 subjects (mean change=2.46, p=0.02, normal T-QoL score range =0-36) whose skin disease had changed after a mean follow-up period of 12 months. In patients whose disease was stable, T-QoL showed a simple and valid tool to quantify the impact of skin disease on adolescents’ QoL; it could be used as an outcome measure in both clinical practice and in clinical research.

559 Severe teenage acne and breast cancer risk

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Background: Acne has been suspected as a result of high levels of circulating androgens, which may increase the risk of breast cancer. We aimed to investigate whether a history of severe teenage acne may predict subsequent risk for breast cancer in our prospective cohort. Methods: We followed 99,128 female nurses for 20 years (1989-2009) in the large well-characterized Nurses’ Health Study II cohort. We used Cox proportional hazards models to estimate the relative risks of breast cancer risk for women with severe teenage acne. We additionally compared the mid-life plasma androgen levels between women with and without a history of teenage acne (n=2,269). Results: During follow- up, 3,303 breast cancer cases were diagnosed. Among women with a history of severe acne, the relative risk was significantly increased for breast cancer (multivariable-adjusted relative risk, 1.19; 95%CI, 1.03-1.32). We confirmed that women with a history of severe teenage acne had higher mid-dose androgens compared to those without (0.17 vs. 0.15 ng/ml, P=0.02). Conclusion: Our results suggest a history of severe acne is a novel risk factor for breast cancer independent from previously identified risk factors. Elevated androgens may contribute etiologi- cally to the observed association.

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The need for unified international guidance on HIV dermatology

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Abstract:

The prevalence of alopecia areata among 915,429 dermatology patients seen in dermatology practices in the United States (US) is unclear. Several reviews have been published, no large review of the prevalence of US patients with AA has been conducted. The largest review of patients published is a Japanese study involving 67,444 patients at 171 clinics. Leavitt Medical Associates of Florida operated a managed care database in 1993; dermatology offices saw 915,429 patients seen throughout the US. We undertook a nationwide review to evaluate the prevalence of AA in a large sample of patients with a diagnosis of AA (ICD-9 code 704.01) presenting to this group of dermatology practices. Office billing data was collected in regard to age, gender and diagnosis. Of the 915,429 patients, 82,732 were diagnosed with a hair loss ICD-9 code (991.82, 306.3, 697.0, 704.0, 704.00, 704.1, 704.2, 704.8, 757.39, 757.4). Of these, a total of 6,621 patients were diagnosed with AA, equal to 0.7% of all patients seen, 8% of patients seen with any hair disorder. Patients with AA ranged from 1 to 98 years of age (both males and females) were distributed over a Gaussian distribution. Nevertheless, 9.4% were aged 30 to 39, 6.8% were aged 40-49, 5.1% were aged 50-59, 4.6% were aged 60-69, 4.1% were aged 70-79, 2.6% were aged 80-89, and 1.2% were aged 90 or older (both males and females).
Risk of subsequent cutaneous squamous cell carcinoma in patients with melanoma

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Melanoma patients are at increased risk of subsequent cutaneous squamous cell carcinoma (SCC), yet the impact of demographic and tumor-related variables on SCC risk has not been systematically examined. Using a consecutive cohort of melanoma patients diagnosed in a large integrated healthcare delivery system, we examined the incidence rate of SCC and determined the impact of patient characteristics (age, gender, race/ethnicity) and melanoma tumor characteristics (sequence number, anatomic site, size, and histologic subtypes) on SCC risk. We identified all members of Kaiser Permanente of Northern California (KPNC) diagnosed with a melanoma from 2000-2005 (n = 6,178) and obtained data on patient and tumor characteristics and outcomes (SCC, mortality) from electronic databases. We calculated incidence rates assuming the Poisson distribution for event counts. Cox proportional hazard models were used to estimate crude and adjusted hazard ratios. A total of 746 subjects developed SCCs after their initial melanoma diagnosis during follow-up, and the median time to SCC was 2.12 years (when compared to matched controls, postma-

Atrial fibrillation and electrocardiographic characteristics among patients with psoriasis and coronary heart disease

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Psoriasis patients have an increased incidence of cardiovascular disease. Atrial fibrillation is the most common cardiac arrhythmia and is associated with increased morbidity and risk of stroke. The objective of this study is to assess the association between psoriasis and incident atrial fibrillation. Patients with psoriasis who underwent cardiac catheterization were matched to patients without psoriasis at University of California. Electrocardiograms of all subjects were reviewed. The Framingham risk score for atrial fibrillation was calculated to predict incident atrial fibrillation. The subsequent incidence of atrial fibrillation was assessed by chart review with electrocardiographic confirmation. From the 9,473 patients who underwent coronary angiography, 169 patients with psoriasis and cardiovascular disease were identified. The median age of the cases and controls were 56 (range 25-87) and 56 (range 25-87) years respectively. The difference was not statistically significant (p=0.81). During a median follow-up of 2.5 years, the observed incidence of atrial fibrillation was similar between cases and controls (Hazard Ratio 0.9, 95% CI 0.5-1.8, P=0.8). Patients with moderate-to-severe psoriasis had a higher body mass index (31.5 vs. 29.6 kg/m2, P=0.008), but were less likely to moderate facial acne taking part in a large clinical trial of commonly used acne treatments in the cohort of adolescents with acne about which factors made their acne worse. Adolescents with mild to moderate facial acne taking part in a large clinical trial of commonly used acne treatments in the cohort of adolescents with acne about which factors made their acne worse. Adolescents with mild to moderate facial acne taking part in a large clinical trial of commonly used acne treatments in the cohort of adolescents with acne about which factors made their acne worse.
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Varying prevalence of depression in psoriasis according to assessment method: a systematic review and meta-analysis

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Psoriatic patients suffer from impaired Health Related Quality of Life but also show signs of depressive symptoms. This study aims to compare depression in psoriasis patients to healthy controls, to determine the prevalence of depression in psoriasis and to investigate how the method of assessment of depression can affect this prevalence. We conducted a systematic literature search on psoriasis and depression in several databases. We compared mean values for depression questionnaires between psoriasis patients and controls to obtain pooled Standardized mean differences (SMD) and 95%CI, and depression rates according to questionnaires, antidepressant use, International Classification of Diseases (ICD) and the Diagnostic and Statistical Manual of Mental Disorders IV (DSMIV) obtaining pooled OR. Further, we pooled mean values and proportions of depressed psoriasis patients according to the different assessment methods. We included 100 studies, mostly conducted in tertiary centres with only few population based studies. According to studies using questionnaires to assess depression, psoriasis patients were significantly more depressed than healthy controls with a SMD of 1.16 (95%CI 0.67-1.66). Five population based studies showed that psoriatic patients had 3.5 times higher depression rates than controls. Unannounced standardized patients (SPs) are acted in physicians’ practices to evaluate their behavior in a real clinical setting. This pilot study tested the feasibility of using unannounced SPs and moulage (a clinical looking applied to the SP) to determine internal medicine (IM) resident physicians’ melanoma detection rates for White and Black SPs. Eight unannounced SPs, 4 White and 4 Black were evaluated by 8 third-year University of Illinois at Chicago IM residents. Two White and 2 Black SPs had a melanoma moulage applied to the hypothetical examinee on the palm (hand) while 2 White and 2 Black SPs had the moulage placed on arch of the sole (foot). Each group of SPs presented with a clinical scenario that showed a patient with a melanoma. Five SPs with melanomas in skin or nails recorded their visits and documented whether the moulage was detected or not. Of the 8 unannounced SPs evaluated only, 1 White SP had the moulage detected on the foot (25%).

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Herpes zoster vaccine effectiveness against incident herpes zoster and post-herpetic neuralgia in an older US population

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Thymic stromal lymphopoietin (TSLP) and atopic dermatitis (AD) in a longitudinal cohort study

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TSLP is a master initiator of allergic inflammation. In 2010, a study showed a decreased risk of AD among US children with TSLP expression in middle school students.

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A pilot study using unannounced patients and moulage to measure melanoma detection rates by internal medicine residents

C Hernandez1 and R Richmond1 1 Dermatology, University of Illinois at Chicago, Chicago, IL and 2 Dermatology, Northwestern Feinberg School of Medicine, Chicago, IL

Melanoma outcome disparities in skin of color have been attributed in part to lower levels of primary care physician training in its presentations. Unannounced standardized patients (SPs) are acted in physicians’ practices to evaluate their behavior in a real clinical setting. This pilot study tested the feasibility of using unannounced SPs and moulage (a clinical looking applied to the SP) to determine internal medicine (IM) resident physicians’ melanoma detection rates for White and Black SPs. Eight unannounced SPs, 4 White and 4 Black were evaluated by 8 third-year University of Illinois at Chicago IM residents. Two White and 2 Black SPs had a melanoma moulage applied to the hypothetical examinee on the palm (hand) while 2 White and 2 Black SPs had the moulage placed on arch of the sole (foot). Each group of SPs presented with a clinical scenario that showed a patient with a melanoma. Five SPs with melanomas in skin or nails recorded their visits and documented whether the moulage was detected or not. Of the 8 unannounced SPs evaluated only, 1 White SP had the moulage detected on the foot (25%).

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Epidemiology of anorectal melanoma in the United States: 1992-2009

A Callahan,1,2 VF Anderson,3 JH Yearwood,2 1 VAMC Greater Los Angeles Healthcare System and University of Southern California, Los Angeles, CA, and 2 University of California, Los Angeles, CA

Anorectal melanoma is a rare type of malignant melanoma that is not well- characterized. We, therefore, used the National Cancer Institute’s Surveillance, Epidemiology, and End Results (SEER) database to determine the incidence of anorectal melanoma in men and women from 1992 through 2009.

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Prognostic factors in transformed mycosis fungoides: A retrospective analysis of 187 cases

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Mycosis fungoides (MF) is a prototypic in situ cutaneous T-cell lymphoma and the most common form of primary cutaneous lymphoma. R.18 cells account for most of the cases. More than 10% incidence is noted in the world population. MF is considered to be a spectrum of clinical entities with a biologic progression from early to advanced stages. MF is mainly treated with topical and systemic therapies. However, the prognosis of MF is poor. It is important to identify factors that can be used for the early identification of adverse outcomes. MF has a high rate of transformation to cutaneous T-cell lymphoma (CTCL). CTCL is a rare disorder that is often fatal. MF patients with CTCL progression have a poor prognosis. The factors that influence the outcome of these patients are limited and lack of consensus.

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**Pigmentary phenotype and race are incomplete predictors of Fitzpatrick skin type**

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The Fitzpatrick skin type classification is a method to assess sunburn/tanning by evaluating patient-reportsensitivity to UV. Physicians often estimate FPST based on race or appearance rather than asking the patient about burning or tanning. Physicians often assign ethnic minorities to FPST IV-V based on skin color; this method has proved unreliable. Given the increasing ethnic diversity in the US, we sought to clarify the assumption that FPST can be visually estimated by determining whether race and pigmention variables are predictive of FPST in a racially diverse population. 3366 people completed a cross-sectional survey. Multivariate ordinal logistic regression was performed for FPST on predictors of sex, age, hair, and constitutive skin color, and race. Ten-fold cross-validation performed and the mean absolute error was weighted kappa was calculated to evaluate accuracy. The entire range of FPST I-VI was observed for all racial ethnic groups. Hair, eye, and skin color were independent predictors of FPST, race was also an independent predictor even when controlling for pigmention phenotype. The predictive model had a weighted kappa statistic of 0.53 and mean absolute error of 0.91% for prediction within one level, suggesting that constitutive pigmentation and race are incomplete predictors of FPST. While FPST can be estimated by observing burn risk for sunburn or tanning and ability. Race was also an independent predictor of FPST, suggesting that genetic factors beyond pigmentation underlie response to UV radiation. All FPST were observed in all racial groups. Given the increasing ethnic diversity in the US, pigmention may predict skin cancer risk in these populations.

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**SSc-overlap syndromes differ in disease progression from limited and diffuse SSc (on behalf of the DSSC investigators)**

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Systemic sclerosis (SSc) is a heterogenous multisystem connective tissue disease, which origi- nates from the consequence of an interaction between an altered immune process, vascular endothelial cell injury as well as an excessive production and accumulation of collagen and other ECMs, causing skin sclerosis and fibrosis of affected visceral organs. A very interesting subset includes patients with overlap syndromes, presenting with SSc features as well as symptoms of other rheu- matic diseases. These represent a very remarkable selection of sclerodermatous patients, categorized either by the detection of specific antibodies, by specific clinical features and for a certain genetic background. Among all registered 3365 patients, 13% were classified as SSc overlap, while 48% were diagnosed with limited SSc and 30% with diffuse SSc. Within the overlap cohort 15 % had a positive extractable nuclear antibodies (ENA) and 13% anti-Scl-70 antibody positive, while the remain- ing patients harbored other antibody specificities (46%). Within this group of 21% patients with other antibodies, 32% were U1RNP positive, 16% showed PM/DM antibodies (PM), 24% Ro, 11% La, 5% anti-SS-A, 4% Sm-2, 2% SLE-ANA, and 13% were positive for rheumatoid factor. Detailed analysis of different organ manifestations revealed, that 59% of overlap patients suffered from muscular involvement, followed by 52% with GI-manifestation, 35% with lung fibrosis, 12% with heart involvement, 11% with skin involvement, and 11% with GI involvement. This indicated that overlap patients differ significantly from the limited and diffuse form of SSc, especially regarding lung fibrosis and heart involvement (log rank 0.0001).

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**Vitamin D intake and risk of incident psoriasis**

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Medical Center, Denver, CO.

S100 marker tended to either have a more immediate clinical impact than the average post, or to relate to posts tended to either have a more immediate clinical impact than the average post, or to relate to the pathobiological mechanisms of psoriasis. The role of systematic reviews on immune system was covered on 10/23/2012, 65, the role of cytokines in immune system was covered on 9/19/2012, 55, the role of cytokines in immune system was covered on 11/26/2012, 77, the role of cytokines in immune system was covered on 9/19/2012, 140, the role of cytokines in immune system was covered on 11/26/2012, 225, the role of cytokines in immune system was covered on 10/23/2012, 225, the role of cytokines in immune system was covered on 11/26/2012, 133, the role of cytokines in immune system was covered on 11/26/2012, 133, the role of cytokines in immune system was covered on 11/14/2012, 498, the role of cytokines in immune system was covered on 11/14/2012, 739, the role of cytokines in immune system was covered on 11/20/2012, 720, the role of cytokines in immune system was covered on 11/14/2012, 0.53 and mean absolute error of 0.91% for prediction within one level, suggesting that constitutive pigmentation and race are incomplete predictors of FPST. While FPST can be estimated by observing burn risk for sunburn or tanning and ability. Race was also an independent predictor of FPST, suggesting that genetic factors beyond pigmentation underlie response to UV radiation. All FPST were observed in all racial groups. Given the increasing ethnic diversity in the US, pigmention may predict skin cancer risk in these populations.

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**Inverse relationship between melanoma death and sentinel lymph node metastases at age by in the SEER Databases (2005-2009)**

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It is known that elderly melanoma patients have lower survival rates than younger patients with melanoma. Paradoxically, a few smaller institutional studies have found a lower frequency of sen- tinel lymph node positive in elderly patients. This is the first study to examine these relationships across all age groups in a large national sample. The US Surveillance Epidemiology and End Results (SEER) Databases were queried to examine 122,721 melanoma cases from 2003 to 2009. Controlling for tumour depth, prevalence rates of sentinel node involvement and melanoma death were assessed for all age groups. The associations between age, nodal status, and mortality were then estimated using logistic regression analyses, controlling for tumour depth, ulceration, primary tumor site, his- totype, sex, age, and year. The top 5 posts [date posted; users engaged] with the largest reach were: Sciton BroadBand Light treatments can change the skin, 33% people completed a cross-sectional survey. Multivariate ordinal logistic regression was performed for FPST on predictors of sex, age, hair, and constitutive skin color, and race. Ten-fold cross-validation performed and the mean absolute error was weighted kappa was calculated to evaluate accuracy. The entire range of FPST I-VI was observed for all racial ethnic groups. Hair, eye, and skin color were independent predictors of FPST, race was also an independent predictor even when controlling for pigmention phenotype. The predictive model had a weighted kappa statistic of 0.53 and mean absolute error of 0.91% for prediction within one level, suggesting that constitutive pigmentation and race are incomplete predictors of FPST. While FPST can be estimated by observing burn risk for sunburn or tanning and ability. Race was also an independent predictor of FPST, suggesting that genetic factors beyond pigmentation underlie response to UV radiation. All FPST were observed in all racial groups. Given the increasing ethnic diversity in the US, pigmention may predict skin cancer risk in these populations.
590 Comparison between treatments for adult and adolescent acne: Response to treatments and characteristics of the patients

591 High prevalence rates of occupational hand eczema among dental workers in Japan

592 What are the most important questions to be answered in dystrophic epidermolysis bullosa (DEB) research?

593 High prevalence rates of contact allergy in the European general population

594 Patient-assessed disease severity is a strong determinant of health-related quality of life in chronic hand eczema

595 Black henna tattoos but not hair colorants are an important risk factor for contact allergy to p-phenylene diamine in the European general population
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The impact of localisation on the association of itch and acne. Results from a population survey among adolescents

F Dalgen1 and J Halvorsen1

Two small studies have shown an association between adolescent acne and itch. However, there is a need for population-based studies to better examine this relationship, especially regarding the localisation of lesions. The objective of this study was to examine the association between localisation of acne and itch in a large sample of adolescents from the general population in Norway. The design was a cross-sectional population-based study: All 18 or 19 year olds in their final year of schooling living in Oslo were invited to participate in our questionnaire. In total, 4744 adolescents were invited and 3775 (80%) completed the questionnaire. Study participants were asked to rate current severity of acne and itch intensity. The prevalence of itch among adolescents with facial acne was 17.6% (72/409), and the prevalence of itch among adolescents with acne on other body sights was 16.0% (123/763). An adjusted logistical regression analysis controlled for mental distress, sex, family income and ethnicity, the adjusted odds ratio for acne and current itch was 2.43 (1.70-3.16) for those with facial lesions compared to 2.21 (1.05-4.64) among those with lesions on other body parts. The conclusion is that there is a high and significant association between acne and itch among adolescents with facial lesions. This should be kept in mind in the management of adolescents with facial acne.

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International validation of a quality of life instrument specific to cosmetics and physical appearance: The BeautyQoL

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Objective: The BeautyQoL instrument is a multi-dimensional self administered questionnaire which has been specifically developed over three years in 16 languages for assessing the impact of cosmetic products and physical appearance on Quality of Life (QoL). This study reports the main features of the validation process. Methods: An acceptability study was carried out on 874 subjects in France, UK, Germany, Spain, Sweden, Denmark, Brazil, Japan, India (Hindi and English languages), China and South Africa (Zulu, Sotho and English languages). 3213 subjects were then further recruited for completing the BeautyQoL questionnaire in 42 questions structured in five dimensions, explaining 76.7% of the total variance: Social Life, Self confidence, Psychological life, Energy and Attractiveness. Results: Acceptability was high among the 16 cultures. The validation process confirmed the questionnaire into 42 questions structured in five dimensions, explaining 76.7% of the total variance: Social Life, Self confidence, Psychological life, Energy and Attractiveness. Internal consistency was moderate (alpha coefficients between 0.932 and 0.978). Reproducibility at 8 days was satisfactory in all dimensions. An algorithmic scoring procedure allows calculating an overall score and five sub-scores of the BeautyQoL. The constructs identified in the different cultures of the international validation, and the results in Europe and supports the use of QoL as a routine extent measure for atopic dermatitis studies and proposes a routine clinical use.

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Latent Ccass analysis of 697 patients with non-segmental vitiligo identify of two clinical subtypes

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Non-segmental vitiligo (NSV) is a disease with variable clinical course. Our objective was to identify underlying subtypes of NSV that best explain the diversity NSV. We prospectively collected data of 697 consecutive cases of NSV between 2007 and 2012. Latent class (LC) analysis was used to identify homogeneous groups of patients with similar clinical patterns. Demographic characteristics, localisation of lesions, disease activity and triggering factors were compared across LC. Median patient age was 13 years, median age at onset was 18 years (range 0.25-74). A two-class model showed the best fit (minimization of Bayesian Information Criterion): The LC1 patients (63.5% of the sample) had a high probability of late onset of the disease (0.93), and a lower probability of association with predisposing genetic factors already identified. LC2 patients (36.5%) had a high probability of early onset of the disease before the age of 12 (0.92), associated halos neo (0.40), Koebner phenomenon (0.47), lower surface involvement (<3% of the body surface, 0.64); and family history of vitiligo (0.40). Logistic regression comparing LC1 and LC2 patients showed that involvement of the head was linked to LC1 (85.5% vs 74.4% for LC2) (p=0.001) whereas trunk and limbs localizations were more often seen in LC2 (respectively 69.8%, 81.9% than in LC1 respectively 59.9%, 63.5%). In addition, combination with atopic dermatitis or with another autoimmune disease was linked to LC2 as it was the case for familial background of autoimmune rheumatisms and other autoimmune disease. LC analysis allows identifying 2 distinct subtypes of NSV. This classification is in agreement with the current knowledge of vitiligo and may help to improve our understanding of autoimmunity/inflammation with respect to predisposing genetic factors already identified.

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Incidence and mortality of bullous pemphigoid in Olmsted County, Minnesota, USA over five decades

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Bullous pemphigoid (BP) is a chronic, autoimmune blistering disease that occurs predominantly in the geriatric population. In Europe there have been shown an increased incidence of BP and there is evidence to suggest BP is associated with an increased mortality rate. The Rochester Epidemiology Project was used to identify 101 patients who were residents of Olmsted County, Minnesota at their first lifetime diagnosis of bullous pemphigoid (BP) between January 1, 1950 and December 31, 2009. Incidence rates per 100,000 person-years were calculated using incident cases of BP as the numerator and age- and sex-specific estimates of the population of Olmsted County, Minnesota as the denominator. The age- and sex-adjusted incidence of BP was 2.6 per 100,000 person-years (95% confidence interval [CI] 2.1–3.1). Age-adjusted incidence was 2.5 per 100,000 person-years (95% CI: 2.1–3.1) for females compared to 2.7 per 100,000 person-years (95% CI 1.9 – 3.5) for males (p = 0.65). Incidence of BP increased significantly with age at diagnosis (p<0.001) and over time (p<0.001). Overall survival was estimated using the Kaplan-Meier method. Estimated overall survival rates at 5, 10, 15, 20, and 25 years were: 85%, 72%, 76%, 71%, and 42%, respectively. The survival observed in the incident BP cohort was significantly lower than expected (p<0.001). Patients with bullous pemphigoid had a standardized mortality ratio of 1.92 (95% CI 1.42 – 2.38) from this United States support previous reports of increased, though less marked mortality of BP compared to that reported in Europe.

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Reliability study of four objective outcome measures for atopic dermatitis

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It is not known which objective disease extent measure for atopic dermatitis is the most reliable. This study compared the inter-rater and inter-rater reliability of the four most commonly used outcome measures for atopic dermatitis: the objective SCORing Atopic Dermatitis (SCORAD), Eczema Area and Severity Index (EASI), Osterud Atopic Dermatitis Severity Index (OASDI) and five sub-scores for each dimensions (profile). External validity testing revealed that the instrument in all dimensions. An algorithmic scoring procedure allows calculating an overall score and five sub-scores of the BeautyQoL. The constructs identified in the different cultures of the international validation, and the results in Europe and supports the use of QoL as a routine extent measure for atopic dermatitis studies and proposes a routine clinical use.

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Inpatient pseudocellulitis: Assessing the extent of the problem through dermatology consultation services

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Due to the many dermatological conditions that can mimic cellulitis, pseudocellulitis is commonly encountered by inpatient dermatology consultation teams. In order to better quantify and quality control inpatient consultation, we conducted a retrospective review of inpatient dermatology consultation services in 2008 across four academic medical centers to assess the number of consultations requested for cellulitis, the incidence of pseudocellulitis, and risk factors associated with the diagnosis. In 2008, a total of 1,430 inpatient dermatology consultations were conducted at Massachusetts General Hospital, University of California Los Angeles Medical Center, University of Alabama Medical Center, and University of California San Francisco Medical Center. Of these, 75 (5.24%) were identified for evaluation of the cellulitis. There were 14 women and 36 men with a mean age of 56.5 years. 65 (86.67%) of these patients were admitted to the hospital for the evaluation and treatment of their rash. After evaluation by dermatology, 20 (26.67%) patients were found to truly have cellulitis whereas 55 (73.33%) patients were diagnosed with pseudocellulitis. The most common mimicking diagnoses were stasis dermatitis (28%), contact dermatitis (12%), and tinea pedis (10.67%). The most common risk factors found in all patient evaluated for cellulitis were a history of skin disease (72.3%), diabetes mellitus (66.7%), and active cancer (17.3%). The misdiagnosis of cellulitis is a significant problem among hospitalized patients. Early dermatology consultation in order to establish a correct diagnosis may decrease unnecessary antibiotic usage and shorten hospital stays. Obtaining a dermatology consultation in the emergency room setting may be a cost-effective strategy to decrease overall hospital admission rates.

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602 Life-style factors associated with hidradenitis suppurativa

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Hidradenitis suppurativa (HS) is a chronic inflammatory disease of the skin that is incompletely understood. Knowledge of disease associations may further the comprehension and management of this condition. Our aim was to create a formal database of information gathered from individuals with the diagnosis of HS seen in a specialty dermatology clinic. First, a standard, self-reported questionnaire on life-style factors was administered to 88 patients. Subsequently, a retrospective chart review from January 1, 2003 to May 31, 2012 was performed. Charts of patients with the ICD 9 code for HS were evaluated. 366 subjects who met clinical criteria for HS were included in the database. A control population for the database was created from subjects seen in the same clinic during the same time period for the diagnoses of keratosis or verruca vulgaris using the matching criteria of age +/- 5 years, race and gender. Based on the self-reported questionnaire results, 69.9% of HS patients were obese, 49% of HS patients admitted to consuming fast-food two or more times per week, and 56.3% of HS patients reported no leisure-time physical activity. Subsequent review of the HS database revealed that in patients with the appropriate data available, 74.7% (204 of 273) HS subjects were found to be obese while only 25.3% (69 of 270) of the controls met this criterion. This difference was statistically significant (p = 0.003) and the odds ratio was 1.54 (97.22, 54.4%) (199) of subjects were white and 23.7% (94) of subjects were black. The average age was 39.2 years. There is a significant relationship between lifestyle factors and this disease, which should further be investigated to evaluate a possible metabolic pathway for HS.

604 Clinical factors and outcomes associated with invasive melanoma biopsy transection

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A recent audit of dermatopathology reports from the University of Utah Department of Dermatology revealed that 31% of invasive melanoma biopsies were deeply transected. To gain further insight, chart review of 83 invasive melanomas cases biopsied by dermatologists from 6/1/10 to 5/31/11 was conducted. A mixed effect model was used to adjust for floor effects within providers. Subgroup analysis on historical factors contributing to deep transections occurred with shave biopsy (p = 0.05). Other clinical factors that were statistically associated with transection included lack of clinical suspicion for melanoma (p = 0.02), female patients (p = 0.04), and non-smart location (p = 0.03). Patients with deeply transected biopsies were more likely to get sentinel node biopsy (71% vs. 30%, p = 0.001). Given that all transected melanomas were biopsied via shave technique, questions arise as to why this technique was chosen by clinicians. Deeply transected diagnostic accuracy is a possibility given that a lack of clinical suspicion was significantly associated with biopsy transection. Concern regarding cosmesis or the time constraints of an excisional biopsy may cause clinicians to compromise optimal clinical practice. Further studies are needed to elucidate these factors, but the increased rate of sentinel node biopsies associated with invasive melanoma biopsy transection may be associated with a lack of clinical suspicion.

605 Pilot study of skin aging peculiarities in patients with metabolic syndrome

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Introduction: Overweight and obesity in youth is a worldwide public health problem. Worldwide 343 million children and adults were reported to be overweight or obese in 2008. The metabolic syndrome (MetSy) is an aggregation of components of metabolic syndrome which can be cause by oxidative stress.

Aim: The aim of our pilot research is to compare skin histological condition in patients with metabolic syndrome (MS) and without it. Material and methods: Generally we have evaluated 13 patients, 7 of them had MS. The research was divided into several steps: clinical examination, blood tests and punch biopsy. Punch biopsy 3-4 mm deep was taken from the dorsal surface of the palm. Specimens were stained with haematoxin-eosin and with Trichrom Masson, immunohistochemically CD 34, CD 117, CD20, CD8 and bcl-2 were detected. Capillaries, CD 117, CD3, CD20, CDB and fibers were calculated per 1 mm 2 but adipoctyes, were measured by magnification 40x with ruler of Axiostar plus microscope. Bcl-2 expression was evaluated per 100 cells. All data was analyzed by SPSS 17.0 Excel program. Results: Women were more often older than men (40 vs. 37 years). The common histopathological pattern were: hyperkeratosis, granulosis, dermal fibrosis and a subtle infiltrate around blood vessel composed of T lymphocytes. Acanthosis, or thickening of the stratum spinosum was present in 19.5% of diagnoses. 37 patients (12.3%) had significant adverse events related to antibiotic usage such as drug rash, drug-induced vasculitis, and Crohnotiam difficile infection. Cellulitis is a considerable problem in medicine, with many patients having multiple bouts in the outpatient primary care setting alone. This study attempts to quantify the nature of the problem at one large medical center to guide future studies. Given the high prevalence of chronic skin disease and lymphedema in this population, we believe that a substantial proportion of these patients may have had pseudocellulitis rather than a true infection. A collaborative effort between primary care physicians and dermatologists may help identify potential mimicking conditions and modify contributing risk factors to reduce the burden of disease.

606 Fragrance contact allergy in the European general population

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Objectives: To determine the prevalence of fragrance contact allergy in the European general population and to assess the clinical relevance of positive patch test reactions to different fragrances. Methods: Cross-sectional study in a random sample of the general population, aged 18 to 74 years, in 6 European areas (Sweden, The Netherlands, West-Germany, East-Germany, Italy, Portugal). 12,177 subjects were interviewed about lifetime, 1-year and point prevalence of any skin disease and history of exposure to products containing fragrances, metals, plastics, rubber, leather, hair dye, with frequency and pattern of use. A random sample (n=1,119) patch tested to the European standard series True Test panel 1, 2, 3, and 20 fragrances in Finn Chambers. Results: The conservative prevalence of fragrance contact allergy defined by the existence of a positive patch test to Fragrance Mix I (FM I) or Fragrance Mix II (FM II) or any of the individual materials in either FM I or FM II or Pan Baal sesquiterpene lactones or 4-4′-Dihydroxy-4′-methylpentyl-3-cyclohexene-1-carboxaldehyde (HPMCC) that show clinical relevance defined conservatively as lifetime avoidance of scented products and contact dermatitis in a lifetime or an itchy skin rash lasting more than a 3 days. The lifetime, respectively is 0.8% and 1.9%, respectively. This compared to a prevalence of up to 14% reported in clinics in dermatitis patients. The prevalence rates of contact allergy to fragrances in females are about two times higher than in males in very country. Conclusion: There was a substantial prevalence of fragrance contact allergy in the general population in Europe as compared to previously published clinical data.

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Pharmacogenomics is the study of the role of the genome in drug response. Its name (pharmaco- + genomics) reflects its combining of pharmacology and genomics. Pharmacogenomics analyzes how the genetic makeup of an individual affects his/her response to drugs. It deals with the influence of acquired and inherited genetic variation on drug response in patients by correlating gene expression or single-nucleotide polymorphisms with pharmacokinetics (drug absorption, distribution, metabolism, and Psoriasis is a model disease for the development of pharmacogenomic markers of treatment response, with ready access to diseased tissue and objective validated outcome measures. With the application of state-of-the-art technologies and investment in. Â Current pharmacogenomic studies in psoriasis show excellence in many areas, including the investigation of a broad range of psoriasis therapies. To facilitate the advent of stratified medicine in psoriasis, uniformity of study design is required, with high quality, consistent phenotyping strategies for participants; definitions of outcome; and the publication of reproducible methodologies.