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Post exposure prophylaxis (PEP) to HIV - epidemiological profile of patients from the Medical University of Vienna (MUV) general hospital in years 2008-2009

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PEP to HIV is a course of antiretroviral drugs administered within 72 hrs after events with high risk of exposure to HIV aiming to reduce the odds of established infection.We evaluated the putative HIV exposed individuals referred to the MUV and indicated for PEP in years 2008-2009. Our so far analyzed data of 180 individuals (research in progress) demonstrated that:

- 44.1 % are females,
- indication type: unprotected homosexual contact [28.5%, from which 45% of source patients (SPs) were HIV positive], needlestick injuries (22.8%, 37.5% HIV positive SPs), unprotected heterosexual contact (21.4%, 20% HIV positive SPs), occupational exposure (12.8%, 100% HIV positive SPs), rape (11.4%) and needle exchange by IVDUs (2.8%) where HIV status of SPs were unknown,
- PEP regimens were Kaletra®/Truvada® (79.4%) or Combivir®/Truvada® (20.5%),
- 58.8% of individuals tolerated the PEP without any adverse events, 35.3% had minor adverse events (nausea, fatigue, diarrhea, abdominal discomfort or slight elevation of pancreatic enzymes) and in 5.8% PEP was modified or discontinued (severe adverse events: strong diarrhea, abdominal pain and vomiting or significant elevation of liver function parameters),
- 77.1% of patients missed at least one of their follow-up visits planned at 1, 3 and 6 months after PEP start, and
- no case of seroconversion was observed.

In conclusion, approximately equal numbers of sexes seek counseling service for PEP. Most prevalent types of exposure include high risk sexual contact and needlestick injuries. Kaletra®/Truvada® combination seems to be a well tolerated and effective therapy.

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Validation and refinement of the Millennium Criteria for atopic dermatitis

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There is no gold standard for a definite diagnosis of atopic dermatitis (AD). The Millennium Criteria (MC) have been proposed to diagnose AD and to differentiate it from atopiform dermatitis (AFD). Our objective is to further refine the MC into a manageable set that can differentiate between AD, AFD and other entities. The hereby renewed MC will be compared with the UK criteria and the Hanifin & Rajka criteria. New consecutive patients in whom the diagnosis of AD was considered in the differential diagnosis were screened for eligibility. Clinical diagnosis was performed by a panel of dermatologists and patients were assessed according to the various criteria lists by study investigators. To refine the MC, a forwards logistic regression model was used. The refined MC were then compared for validity with the UK and Hanifin & Rajka criteria. Data of 210 included patients were used. After logistic regression of the individual criteria of the diagnostic lists, a set of 5 criteria were identified as best discriminators: typical morphology, early age of onset, Dennie-Morgan fold, historical and actual flexural involvement. The refined MC were constituted from these criteria. When comparing the different list for validity in diagnosing AD, the refined MC showed a relative value of 0.81, the UK criteria 0.71 and the Hanifin & Rajka criteria 0.51.This refinement and validity study shows that the refined MC are a valid tool to diagnose AD and AFD in a hospital based setting and therefore could be incorporated in clinical practice and trials.

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Dermofit: a novel software that improves novices' diagnostic accuracy to a level above that of trained medical students

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The cornerstone of dermatological diagnosis is attaching semantics to images. Dermatologists use non-analytical reasoning to achieve this, but non-experts are not afforded the clinical exposure required to develop such skills. To address this we have developed a prototype content based image retrieval system ("Dermofit") to improve non-experts' diagnostic accuracy. 12 test images were randomly selected from the Department of Dermatology's image library. All students (n=60) attending their 10 day undergraduate dermatology attachment between November 2009 and January 2010 were enrolled. The 60 students were randomly split into two groups; the Dermofit group (n=31) used our Dermofit software to achieve a diagnostic match, and the non-Dermofit group (n=29) provided a written diagnosis. On Day 1 the non-Dermofit group diagnosed a median of 1 image (mean=16%) correctly and the Dermofit group identified a median of 12 images (mean=99%) ($p<0.0001$). On Day 10 the non-Dermofit group correctly diagnosed a median of 6 images (mean=51%) correctly and the Dermofit group matched 12 images (mean=99%) ($p<0.0001$). We have demonstrated that student diagnostic scores are increased significantly by using a structured image database coupled with matching of index and referent images. We have replicated similar results in lay novices. Our Dermofit software allows users to achieve a high degree of diagnostic accuracy without explicit definitions of likeness or rule-based strategies, instead capitalising on the users' intrinsic image recognition abilities. If scalable this could set a new paradigm for acquiring dermatological expertise.

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Living Knowledge of the Healing Plants: Results from a Cross-Sectional Study in Habiganj District of Bangladesh

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Dermatology has been prevalent and even endemic in various parts of the world since ancient times. In recent years, attention has focused on these diseases because of the emergence of drug-resistant varieties of these diseases. As a result, it has become imperative to discover novel compounds to treat such diseases. Since plants form one of the best sources for obtaining pharmacologically active constituents, which can be used as remedy for diseases like cosmetic problems of the skin, scalp, hair, and nails; a study of traditional medicinal practitioners in Habiganj district of Bangladesh; to obtain information on plants used by them as remedy for the above-ailments. It is noteworthy in this regard that all the above-mentioned ailments are prevalent in Bangladesh, and the primarily rural population of the country relies on plants or plant parts prescribed by the traditional medicinal practitioners to treat the above-ailments. Interviews were conducted of traditional medicinal practitioners with the help of a semi-structured questionnaire and plant specimens were photographed and identified at the Bangladesh National Herbarium. The collected information showed that the following plants were used to treat dermatology: *Linum usitatissimum* (L.), *Nigella sativa* (L.), *Aconitum napellus* (L.), *Agaricus albolutescens* Zeller, *Olea europaea* (L.), *Brassica napus* (L.), *Ricinus communis* (L.), and *Polygonum persicaria* (L.). Since the rural patients appeared to be generally satisfied with the treatment offered through these plants, it is important to conduct proper scientific studies towards discovery of compounds of interest in these plants, which can be used as safe and effective medicines.

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Role of aryl hydrocarbon receptors (AhR) in tobacco smoke extract induced-matrix metalloproteinase (MMP)-1 expression

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Epidemiologic studies suggest a link between smoking and extrinsic skin aging, and we previously reported that matrix metalloproteinases (MMPs) mediate connective tissue damage in skin exposed to tobacco smoke extracts. Tobacco smoke contains more than 3800 constituents, including numerous water insoluble polycyclic aromatic hydrocarbons that trigger the aryl hydrocarbon receptor (AhR; also called the dioxin receptor) signaling pathway. To analyze the molecular mechanisms involved in tobacco smoke–induced skin aging, we exposed primary human fibroblasts and keratinocytes to tobacco smoke extracts. Hexane- and water-soluble tobacco extracts significantly induced MMP-1 mRNA in both human cultured fibroblasts and keratinocytes in a dose-dependent manner. To clarify the involvement of the AhR pathway, we used stable knockdown cell lines for AhR in HaCaT cells. AhR knockdown abolished the increase in transcription of the AhR-dependent gene CYP1A1/CYP1B1 and MMP-1 upon treatment with either tobacco smoke extract. Furthermore, the tobacco smoke extracts induced 7-ethoxyresorufin-O-deethylase activity, which was almost completely abolished by AhR knockdown. Likewise, treating fibroblasts with AhR pathway inhibitors, i.e., the flavonoids 3-methoxy-4-nitroflavone and a-naphthoflavone, blocked the induction of CYP1B1 and MMP-1. These findings suggest that the tobacco smoke extracts induced MMP-1 expression in human fibroblasts and keratinocytes via activation of the AhR pathway. Thus, the AhR pathway may be pathogenetically involved in extrinsic skin aging.

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Clinical and epidemiological characteristics of pemphigoid in Podlaskie voivodship, 1998-2009.

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The purpose of the study was the analysis of clinical and epidemiological aspects of pemphigoid cases in 1998-2009 in Podlaskie voivodship (about 700,000 inhibitants). Seventy-eight cases, based on clinical picture confirmed with direct or indirect immunofluorescence studies were diagnosed: 35 males-M and 43 females -F. The mean incidence was 5,9 per million (the highest-10,82 in 2009) and increased since 2001. The majority of patients (51,28%) were inhibitants of rural areas and the mean incidence in this group was 7,41 per million (the highest - 14,29 in 1999). The mean patients' age was 72.12+/-13,12 years (76,37+/-10,60 in M and 68,65+/-14,36 in F, $p<0,05$) and was lower in patients from urban than rural areas (66,70+/-14,95 and 76,50+/-8,37, $p<0,05$, respectively). The mucosal involvement (mostly oral) was seen in 29,39% of patients. Fourteen patients (17,95%) had not any concomitant disorders before diagnosis of pemphigoid. Majority (62,82%) had cardiological diseases. Almost half of patients were treated with drugs that are known to induce pemphigoid. Malignances were found in 6 patients before and 6 - after diagnosis of pemphigoid (15,38%). The incidence of co-morbidities rose significantly during the treatment of the disease. The mortality rate was 26,92%, 16, 88% of patients died during the first year after diagnosis of pemphigoid. The study results indicate that pemphigoid remains an important multidisciplinary disorder in ageing society, adversely affecting life style in the elderly. These patients require careful and systematic follow-up to diagnose internal organ diseases, including these, that might be induced by therapy of pemphigoid.