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Toll-like receptor 9 in systemic lupus erythematosus, impact on glucocorticoid treatment

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Journal of Dermatological Treatment 2013,24,411- 417,**

Aim:

To assess TLR9 expression in systemic lupus erythematosus (SLE) patients, its correlation with disease activity, and impact of TLR9 expression on the response to oral glucocorticoids.

Methods:

Twenty-five active SLE, 15 inactive, and 15 control subjects were included. Anti-DNA, ANA, C3, C4, and TLR9 mRNA expressions were assessed. Active SLE patients only received oral steroid for 6 weeks. Post therapy, they were classified into steroid sensitive and steroid resistant. Data were reassessed after treatment.

Results:

SLEDAI, anti-DNA, ANA, and TLR9 expressions were significantly higher in active SLE patients. Based on retrograde analysis, TLR9 expression was significantly higher in steroidresistant versus steroid-sensitive group before treatment, with no significant difference between them after treatment. There was a significant positive correlation between TLR9 expression and SLEDAI score and anti-DNA and negative correlation with C3 and C4 in all patients.

Conclusion:

TLR9 may play a role in the pathogenesis of SLE and correlates with the disease activity. Corticosteroids have no effect on TLR9 expression, explaining lack of corticosteroid response in some SLE patients. TLR 9 expression can be used in predicting glucocorticoid response in active SLE patients. New treatment modalities targeting TLR9 expression may be of value in steroid-resistant patients.

(2)

A proliferation-inducing ligand in atopic dermatitis and vitiligo
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International Journal of Dermatology 2014, 53, 1073-1079

Background:

A proliferation-inducing ligand (APRIL) is a tumor necrosis factor (TNF) superfamily member ligand that stimulates B cells in vitro and in vivo. It also plays an important role in T cell activation and survival.

Objectives:

This study was conducted to evaluate serum levels of APRIL in patients with atopic dermatitis (AD) and vitiligo and their correlation with disease activity.

Methods: A total of 100 subjects were included; these comprised 40 AD patients, 40 vitiligo patients and 20 control subjects. Serum APRIL levels were measured and their relationships with the severity of AD and activity of vitiligo evaluated according to scores on the SCORAD (SCORing of Atopic Dermatitis) and VIDA (VItiligo Disease Activity) indices, respectively.

Results: The serum level of APRIL was significantly higher in AD patients than in the control group. Serum APRIL in patients with severe AD showed a statistically significant difference with serum APRIL in patients with either mild or moderate AD. Serum APRIL was significantly higher in vitiligo patients than in the control group. Differences in serum APRIL among patients with different VIDA scores were significant only between patients with VIDA scores of +1 and +4. Statistically significant positive correlations emerged between serum APRIL and activity of AD ($r = 0.939$) and vitiligo ($r = 0.740$).

Conclusions:

APRIL may play a role in the pathogenesis of AD and vitiligo and could be used as an objective marker for the assessment of AD severity and vitiligo activity. Further studies are required to clarify the precise mechanism of APRIL in the pathogenesis of AD and vitiligo and to test the possible use of APRIL inhibitors as novel modalities of therapy.

(3)

Autologus bone marrow stem cells in atrophic acne scars: A pilot study

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Journal of Dermatological Treatment
2015, 26, 260-5**

Background:

Acne scar is a very distressing and difficult problem for physicians and patients. Management of cutaneous scarring from acne can be challenging and confusing. The available modalities may be effective, having considerable morbidity and long downtime. Besides, they may not have the same efficacy in different skin types or acne scar types.

Objective: To evaluate the short-term safety and efficacy of autologous bone marrow (BM) stem cells (SCs) in treating atrophic acne scars.

Methods: Fourteen patients with moderate to severe atrophic acne scars were included. All patients were subjected to single session of autologous BMSCs therapy. Each patient received 5 mg/kg/day granulocyte colony-stimulating factor (G-CSF) as a single subcutaneous dose for 2 successive days before BM aspiration. The SC-containing solution was injected under each scar intradermally. The scars of the patients were clinically assessed both qualitatively and quantitatively before and after 6 months. The patients were given a preformed questionnaire Cardiff acne disability index (CADI) before and after treatment.

Results: After 6 months of the injection, there was significant improvement in the qualitative grading, quantitative grading and CADI scores. All types of scars showed significant improvement. No significant adverse effects were reported in any patient.

Conclusion:

Autologous BMSCs seem to be a safe and effective treatment option for the management of all types of atrophic facial acne scars.

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Serum Level of Receptor Activator of Nuclear Factor Kappa-B Ligand (RANKL) in psoriasis

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Background: Psoriasis usually precedes the onset of psoriatic arthritis by an average of 10 years in about 70% of patients. Receptor activator of nuclear factor kappa-B ligand (RANKL) is a natural and necessary surface-bound molecule, which is a ligand for osteoprotegerin and functions as a key factor for osteoclast differentiation and activation.

Objective: Evaluation of the serum level of RANKL in psoriasis and psoriatic arthritis and its correlation with severity of the disease as a trial to predict the occurrence of psoriatic arthritis in such patients.

Method : This study included 80 subjects; 40 patients had chronic plaque psoriasis, 20 patients had chronic plaque psoriasis with psoriatic arthritis, and 20 were healthy controls. Patients with psoriasis were divided into three subgroups according to psoriasis area severity index score: mild, moderate, and severe. Serum RANKL levels were estimated for all subjects using enzyme-linked immunosorbent assay.

Results: Serum RANKL level in psoriatic arthritis was significantly higher compared to both patients with plaque psoriasis and control groups. Serum RANKL level significantly correlated to the severity of psoriasis, with a very high correlation coefficient in groups I and II. The diagnostic performance of serum RANKL level for the early prediction of psoriatic arthritis in patients with psoriasis was >170 pg/ml.

Conclusion: Serum RANKL level could be considered as a useful diagnostic marker for the early prediction of psoriatic arthritis in patients with moderate and severe psoriasis. Assessment of soluble RANKL in psoriasis could identify those at increased risk for psoriatic arthritis and anti-RANKL agents may be effective in decreasing incidence of psoriatic arthritis.

Dermoscopic features of some scalp disorders

Noha N. Doghaima, Azza M. El-Tukheya, Rania A. El-Tatawya, Nahla R. Ghaly and Doha A. Mohammed, The Egyptian journal of dermatology and venereology 2014, 34, 46-52

Background:

The diagnosis and management of hair and scalp disorders presents a unique challenge for the physician. Dermoscopy has been utilized in recent years for the diagnosis of various hair and scalp diseases.

Objective:

To evaluate the use of dermoscopy as a diagnostic tool for common hair disorders and its application in everyday practice.

Patients and methods:

The present study included 127 patients with various hair disorders. Their clinical diagnoses were alopecia areata (AA) in 43 patients, androgenetic alopecia in 35 patients, scalp psoriasis in 21 patients, scalp seborrheic dermatitis in 14 patients, tinea capitis in 11 patients, and discoid lupus erythematosus (DLE) in three female patients. Dermatoscopic examination was performed using polarized-light handheld dermatoscope.

Results:

In AA clustered vellus hairs, black dots, tapered hairs, coudability hairs, and yellow dots were specific features, whereas in androgenic alopecia, greater than 20% hair diameter diversity and peripilar sign were specific. Interfollicular red dots were specific for psoriasis, whereas follicular red dots were specific for DLE. Arborizing blood vessels were features of DLE, seborrheic dermatitis, and psoriasis, in descending frequency. Comma-like hair was a specific feature of tinea capitis. White and brown dyschromia, reduction of follicular ostia, and blue dots were specific features for DLE.

Conclusion: Dermoscopy may be useful in the differential diagnosis of AA, androgenetic alopecia, and tinea capitis. Specification of vascular patterns by dermoscopy can be valuable for the clinical differentiation of scalp psoriasis and seborrheic dermatitis. Dermoscopy may be useful in the evaluation of disease activity of DLE and AA by detecting features of activity and remission.

(6)

Chronic idiopathic urticaria: autologous skin tests and treatment
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Egyptian journal of dermatology and venereology 2014, 34, 46-52

Background:

Chronic urticaria (CU) is defined as urticaria persisting daily or almost daily for more than 6 weeks. Intradermal injection of autologous serum and plasma elicit a cutaneous reactivity in almost 45-60% of patients with Chronic Idiopathic Urticaria (CIU). Activation of coagulation process seems to play an important role in the pathogenesis of CIU. Oral anticoagulant therapy has been shown to be effective in the treatment of CIU.

Objective:

The aim of this study was to evaluate and compare Autologous serum skin test (ASST) & autologous plasma skin test (APST) in the diagnosis of CIU and to determine the effect of treatment with antihistamine (loratadine), and anticoagulant (dipyridamole).

Patients and Methods: This study included 30 patients suffering from CIU. All patients were subjected to intradermal testing with their serum (ASST) and their plasma (APST). The patients were classified according to treatment into 3 equal groups: 10 with loratadine, 10 with dipyridamole and 10 with loratadine & dipyridamole for 1 month. Follow up for the three groups was carried out at the first, second and fourth week of treatment evaluating the effectiveness and adverse effects of drugs. Assessment of symptom score reduce index (SSRI) in ASST and APST positive and negative patients was evaluated.

Results: The ASST was positive in 40% of patients, while APST was positive in 90% of patients. Loratadine, dipyridamole and combination of both were effective in the management of patients with CIU. However, best results occurred with combination of both. No serious side effects of treatment were encountered.

Conclusion: Both APST and ASST can be used for diagnostic purposes in patients with CIU. APST has a higher positivity than the ASST. Combined treatment with antihistamines and anticoagulants provides an effective management.

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Pyruvic Acid versus Salicylic Acid Peels in the Treatment of Acne Vulgaris

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Journal of Pan Arab League of Dermatologists 2010, 21, 9-21

Background: Acne vulgaris is a common skin disorder . Chemical peeling has been used for acne for many years. In addition to its epidermal resurfacing properties, it leads to remodeling of collagen and elastin fibers and deposition of glycosaminoglycans.

Objective: This study aims to evaluate the clinical efficacy and tolerability of pyruvic acid versus salicylic acid peels at gradually increasing concentrations in non-inflammatory and inflammatory acne vulgaris in a split-face design.

Methods: Forty eight patients with mild to moderate facial acne vulgaris were clinically classified into 2 groups; group 1 (15 patients) with non-inflammatory (comedonal) facial acne vulgaris and group II (25 patients) with inflammatory facial acne vulgaris (papulopustular). Peels were performed using pyruvic acid versus salicylic acid in the same patient in a half face model at gradual increasing concentrations over 8 sessions a weekly interval with follow up for 3 months. Clinical evaluation of peeling efficacy was assessed in terms of percentage reduction of lesion count at each visit by two physicians. This was categorized as excellent (>80% improvement), very good (66 - 80%), good (51-65%), fair (25-50%) and poor <25%).

Results: Salicylic acid peels had a significantly higher reduction in the mean number of acne lesions and a higher clinical efficacy grades than pyruvic acid peels in patients of group I ($p < 0.05$). In contrast, non-significant difference was reported between salicylic and pyruvic acid peels in group II. Pyruvic acid peels was better tolerated than salicylic acid peels with less adverse events with statistically significant difference as compared to each other, in patients of both groups

Conclusion: salicylic acid is recommended as first line of treatment for non-inflammatory comedonal acne either alone or in combination with topical treatment agents. Meanwhile, pyruvic acid is recommended as a safe well tolerable treatment modality for ongoing patients with inflammatory acne.

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Comparative Study of 1540-nm Non-Ablative Fractional Erbium Laser versus 2940-nm Ablative Erbium: YAG Laser in Resurfacing of Post -Acne Scarring

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Tanta Medical Sciences Journal 2008,3, 29-39

Background: Atrophic post-acne scarring remains a therapeutically challenging problem despite various currently available technologies. Although ablative laser skin resurfacing is an effective treatment for post-acne scarring, however the long downtime and post-treatment complications are common. Non-ablative fractional laser is a novel concept of cutaneous resurfacing based on microthermal zones heating for collagen remodeling without burning the epidermis.

Objective: to compare between 1540-nm non-ablative fractional erbium laser versus 2940-nm ablative erbium: YAG laser in resurfacing of post-acne scarring as regard efficacy, tolerability and side effects.

Patients & Methods: A total of thirty patients (skin phenotypes III to V) with facial post-acne scarring were divided into two equal groups who received either 2-3 sessions of ablative erbium: YAG laser or 6-9 sessions of non-ablative fractional erbium laser with 3 months follow up. Assessment of the clinical improvement of the scars and development of any complications were done in addition to the degree of subjective satisfaction.

Results: In our series, the overall average clinical improvement was 76% and 75% among the ablative and fractional groups respectively while, the incidence of post-treatment sequelae and complications was higher and of longer duration in the ablative laser group.

Conclusion: Both techniques have namely oozing, crusting and hyperpigmentation especially in the dark skin types and its limited use during winter. On the other hand, the fractional laser efficacy was not as impressive as issued by others in addition to the long treatment course. Meanwhile, it has the advantages of minimal downtime and fewer side effects near similar post-acne scarring resurfacing capacity, however, treatment with ablative erbium laser has the advantages of predictable clinical improvement within shorter time but with longer downtime and increased risk of side effects with short term adverse sequelae even in dark skin types with its safe use all over the year.