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**BOTE (Beginning Of The End) inflammation can be enhanced with SB206, a nitric oxide-releasing topical medication for molluscum contagiosum**

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The hypothesis that the clinical “end point” (BOTE”) sign names inflammation that predicts imminent resolution of molluscum contagiosum (MC), but has never been prospectively studied. Integrated data from two phase 3, multicenter, randomized, double-blind, vehicle-controlled 12-week clinical trials of topical nitric oxide-releasing SB206 gel was used to evaluate an association between BOTE inflammation and MC lesion reduction among 707 randomized patients ≥6 months old. Investigators received training to evaluate BOTE components (erythema, edema, crusting, bullous reaction, erosion) using a 5-grade scoring system, and BOTE condition was scored prospectively during the study. Approximately 80% of patients exhibited BOTE inflammation at any time, regardless of treatment group. At week 12, initial MC lesion counts among vehicle-treated patients decreased by 50.7% from baseline for baseline BOTE+ (39.1%) vs 29.1% for baseline BOTE– patients (p < 0.001). Among SB206-treated patients, MC lesion counts decreased by 63.3% from baseline for baseline BOTE+ vs 51.7% for baseline BOTE– (p < 0.019). Among vehicle-treated patients, 48 (22.8%) who never developed BOTE inflammation during the 12-week study had an 18.5% reduction from baseline MC lesion counts vs a 34.0% reduction in 165 patients (76.2%) who experienced BOTE at any time during the study. This suggests a projected duration of 15 months until lesion clearance for BOTE– vs 6 months for BOTE+ patients. Those who were both BOTE+ and treated with SB206 had the greatest reduction in MC lesion count. SB206 may trigger BOTE inflammation and shorten the duration of MC infection.

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**Non-invasively stratifying atopic dermatitis patients based on inflammatory genes**

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Atopic dermatitis (AD) is a chronic inflammatory disease characterized by significant barrier disruption and intense pruritus. In recent years, there has been a growing number of targeted therapies in clinical development with a predominant focus on antagonizing Th2-mediated inflammation; however, these therapies are effective (PGA 3) in less than 50% of AD patients. We hypothesized that baseline expression of key inflammatory genes would identify potential subsets of AD patients for a more targeted therapeutic intervention with monoclonal antibody-based therapies. Epidermal skin samples were non-invasively collected from the lesional skin of 31 patients with moderate to severe AD using the ‘smart sticker’ adhesive skin collection kit. RNA was subsequently isolated and analyzed by RT-PCR for pre-identified genes (IL-4Rα and IL-12p40), a Cox proportional hazards regression model was performed for each gene and a Cox proportional hazards regression model was performed using 100% of AD patients. Similarly, CCL17/TARC, a biomarker of AD disease severity, was expressed in 96.8% (10/11) of AD patients. Interestingly, the Th2 cytokine IL-13 was expressed in 54.8% (17/31) while IL-11 was expressed in 29.0% (9/31). Additionally, the Th1/Th2 associated genes IL-22 and IL-23 were expressed in 51.6% (16/31) and 58.1% (18/31), respectively. Overall, this study demonstrates the potential utility of non-invasive skin sampling to stratify AD patients based on their dominant inflammatory signature and suggests the incorporation of this clinically valuable technique in the personalized treatment of AD patients with targeted therapies.

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**Anti-phosphatidylserine/prothrombin complex antibodies in patients with cutaneous vasculitis: Possible involvement in the pathogenesis**

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Objective: It was previously demonstrated that cutaneous vasculitis, including IgA vasculitis and cutaneous arteritis (CA), is associated with the presence of IgM antibodies (Abs) against the phosphatidylserine/prothrombin complex (PS/PT). Recently, novel enzyme-linked immunosorbent assay kits for the detection of IgG and IgM anti-PS/PT (asP/PT) Abs have become commercially available. Methods: The prevalence of serum IgG and IgM asPS/PT Abs in both cutaneous and systemic vasculitis was determined using these kits. In addition, to examine whether asP/PT Abs were involved in the pathogenesis of cutaneous vasculitis, inbred wild-type rats were intravenously administered with a rat IgM asP/PT monoclonal Ab established previously or with rat immunoglobulins as controls. To express PS on the surface of vascular endothelium, these rats were given a subcutaneous injection of cell-free histones (250 µg/ml, 300 µl/site) 2 hours in advance. Results: Serum IgM asP/PT Ab levels were elevated in patients with systemic vasculitis with skin involvement and CA compared to those in patients with cutaneous vasculitis without skin involvement and healthy controls. There was no significant difference in the serum levels of IgG asP/PT Abs between the patients and healthy controls. Correspondingly, inbred wild-type rats intravenously administered with the asP/PT monoclonal IgG Ab after appropriate priming—subcutaneous histone injection—developed cutaneous cutaneous vasculitis, whereas vasculitis did not occur in rats given IgG or only priming by histones. Conclusion: IgM asP/PT Abs could be involved in the pathogenesis of cutaneous vasculitis.

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**Dupilumab normalizes expression of type 2 inflammatory genes in patients with eosinophilic esophagitis**

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Background: In a double-blind, placebo-controlled, phase 2 study (NCT02379052), adults with active eosinophilic esophagitis (EoE) were randomized 1:1 to receive dupilumab subcutaneous doses of 300 mg weekly (qw) or placebo. We analyzed the effect of dupilumab (300 mg qw, n = 234) therapy escalations. Female patients with data for 3 consecutive visits between Oct 2015–Oct 2018, the first of which is entry visit, were included in the analysis. Normalized enrichment scores (NES) based on curated gene sets were generated from this study. Analysis of 573C EoE patients, we assessed frequency of and factors associated with remission and recurrence in EoE. The primary outcomes were remission and recurrence of activity which were defined as reaching Cutaneous Lupus Erythematosus Activity and Severity Index activity (CLASS-A) equal to 0, and >1 (after remission) respectively. Time to remission and recurrence of activity was calculated by survival curve analysis. Variables that had a significant impact on time to remission were then used to generate a Cox proportional hazards regression model. Results: Sixty patients (48%) reached remission of EoE activity within a median of 18 months (IQR: 11-32 months) from the initial visit. Patients who achieved remission were more likely to be lifetime non-smokers (65% vs 31%, p = 0.002) and less likely to have histologically confirmed esophageal eosinophilia (DLE) (83% vs 88%, p = 0.004). Cox proportional hazards regression model showed that both the absence of DLE (HR:4.20, 95% CI: 1.98-8.92) and lifetime non-smoker history (HR:2.57, 95% CI: 1.22-5.41) were independent predictors of remission; however, these factors did not significantly predict a shorter time to remission. Twenty nine patients (63%) of participants experienced disease recurrence within a median of 13 months (IQR: 7-19 months) from their remission date. Patients with recurrence of EoE activity had a longer disease duration prior to their baseline visit (p < 0.002), and were more likely to have DLE (83% v. 29%, p = 0.005). These findings support the notion that discoid lupus patients and smokers can be more refractory to standard-of-care treatments in EoE, and may be helpful for clinicians to guide EoE patients on their potential disease course.