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Topical corticosteroids and risk of diabetes mellitus: Systematic review and meta-analysis

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Background: Topical corticosteroids are a widely used treatment in a range of dermatologic conditions including inflammatory cutaneous disorders such as psoriasis and eczema. Topical steroids have been previously associated with potential for hyperglycemia and glucosuria, and thought to have a relatively safe side effect profile. In prolonged topical corticosteroid use, there is the potential for steroids to be absorbed through the skin and eventually reach systemic circulation.

Objective: To investigate the potential association between topical corticosteroid use and development of diabetes, we performed a systematic review and meta-analysis of available case-control data in the literature.

Methods: Electronic database searches was performed to identify studies comparing the proportion of patients with diabetes in cases (patients taking topical corticosteroids) compared with controls (participants not taking topical corticosteroids). The odds ratio (OR) was used as a summary statistic.

Results: Four case-control studies were pooled for meta-analysis. Overall, we found a significant association between topical corticosteroid use and development of type 2 diabetes mellitus, even after adjustment for confounding factors (OR 1.24, 95% CI 1.15-1.34, $I^2 = 91\%$, $P < .00001$). There was no potency-dependent effect noted, with no significant difference noted between the subgroups.

Conclusions: Systematic review and meta-analysis of the current available literature demonstrates a potential association between topical corticosteroid use and risk of developing diabetes mellitus. This risk does not appear to be dependent on potency of the topical medication, but rather the cumulative dose and cumulative duration of use.

Commercial disclosure: None identified.

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Hidradenitis suppurativa and psychiatric comorbidities, suicides, and substance abuse: Systematic review and meta-analysis

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Background: Hidradenitis suppurativa (HS) is a chronic inflammatory skin disorder of the hair follicles, and has been associated with a multitude of systemic disorders and pathologies. There is increasing evidence to suggest that chronic inflammatory skin disorders may be associated with psychiatric comorbidities, however this relationship has not been well established.

Objective: To perform a systematic review and meta-analysis to assess the association between HS and psychiatric comorbidities, suicide and substance abuse.

Methods: A systematic review and meta-analysis was performed according to PRISMA guidelines.

Results: HS cases had a significantly higher odds of having schizophrenia compared with the control group (OR 1.66, 95% CI 1.53-1.79, $P < .00001$). There was also a significant association with bipolar disorders (OR 1.96, 95% CI 1.65-2.33, $P < .00001$), depression (OR 1.75, 95% CI 1.44-2.13, $P < .00001$), anxiety (OR 1.71, 95% CI 1.51-1.92, $P < .00001$), and personality disorders (OR 1.50, 95% CI 1.18-1.92, $P = .001$), suicide (OR 2.08, 95% CI 1.27-3.42, $P = .004$), substance-related disorders (OR 2.84, 95% CI 2.33-3.46, $P < .00001$), and alcohol abuse (OR 1.94, 95% CI 1.43-2.64, $P < .0001$).

Conclusions: The available evidence demonstrates patients with HS are significantly more likely to have substance-related disorders, alcohol abuse, suicide as well as psychiatric issues such as schizophrenia, bipolar disorders, depression, anxiety, personality disorders and substance abuse. Therefore, for dermatologists treating patients with HS, screening for these comorbidities, psychiatric referral and adequately managing pain will improve the overall wellbeing of patients.

Commercial disclosure: None identified.

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Antimalarial therapy for granuloma annulare: Systematic review and meta-analysis

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Background: Granuloma annulare (GA) is a granulomatous skin disorder which presents with erythematous annular plaques with central clearing. Although GA is benign and mostly asymptomatic, generalized forms of GA may persist for years chronically and may respond poorly to topical therapies. There have been reports of antimalarial agents used for systematic therapy in cases where other agents have failed.

Methods: A systematic review of existing studies was performed and data was pooled for meta-analysis. All study types included case reports were included.

Results: A total of 10 studies were identified from systematic database searches, comprising 49 cases. There were 35 cases using hydroxychloroquine, 12 cases using chloroquine, and 2 cases treated with antimalarial medication but unspecified. 8 included cases were paediatric cases. 40% of cases were females. Duration of lesions ranged from 2-22.1 months. Overall, the efficacy rate of treatment with antimalarial therapy was 79.6% (39 out of 49 cases). Subgroup analysis according to type of antimalarial medication demonstrated a significantly higher efficacy rate for chloroquine cases (100%, 12 out of 12 cases) with improvement compared with hydroxychloroquine (71.4%, 25 out of 35 cases). All paediatric cases resulted in GA remission with therapy. There were no significant side effects reported. All cases which had relapsed were during weaning of antimalarial treatment, which were successfully treated once maintenance therapy was continued.

Conclusions: The evidence for antimalarial therapy of GA is limited. The data is promising however, these should be considered as a possible treatment option for patients with generalized GA.

Commercial disclosure: None identified.

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Mycophenolate mofetil and atopic dermatitis: Systematic review and meta-analysis

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Background: For severe cases of atopic dermatitis, systemic or potent agents may be required for control of disease. There have been some reports of treatment efficacy of off-label use of mycophenolate mofetil (MMF) in patients with refractory atopic dermatitis who are unresponsive or have developed adverse effects to initial systemic immunosuppressant agents.

Objective: To perform a systematic review and meta-analysis to assess the efficacy of MMF for atopic dermatitis.

Methods: Electronic searches were performed using six databases from their inception to April 2019. Relevant studies reporting treatment outcomes of atopic dermatitis with MMF. Data were extracted and analyzed according to predefined clinical end points.

Results: From 140 cases, the mean age of patients was 38.21 $\pm$ 22.8 years. There were 52.9% males and 47.1% females. The average number of failed agents was 3.5 $\pm$ 1.2 agents. 77.6% reported partial or full remission. Relapses occurred in 8.2% of cases. The average time for the initial effects was 6.8 $\pm$ 7 weeks. There was a significant reduction in pre to post SCORAD scores for atopic dermatitis (mean difference 18.01, 95% CI 8.54-27.48, $P = .0002$). More males had complications compared with females. Prolonged duration of treatment $\geq$1 year was significantly associated with herpes infections.

Conclusions: The current evidence to date is low-quality in nature but is promising regarding the efficacy and safety of MMF for adult and paediatric atopic dermatitis. There should be ongoing monitoring for infections that may develop for those on longer-term MMF therapy.

Commercial disclosure: None identified.