ACNE AND MALASSEZIA: A RETROSPECTIVE STUDY COMPARING THE INCIDENCE OF SEBORRHEIC DERMATITIS AND PITYRIASIS VERSICOLOR IN ACNE PATIENTS

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Background

- Hyperseborrhea plays a role in the pathogenesis of acne vulgaris (acne), seborrheic dermatitis (SD), and pityriasis versicolor (PV).[1,2]
- Prior research has supported the association between the prevalence of SD and PV in acne patients;[3,4] however, the likelihood of new onset SD and PV among acne patients following their first diagnosis is unknown.
- Here, we aimed to evaluate the likelihood of new-onset SD and PV in patients with a new acne diagnosis compared to those without acne, and to examine whether systemic antibiotics (macrolides or tetracyclines) used for acne management impact this association.

Objectives

- To evaluate the incidence of SD and PV in patients with acne vulgaris compared to healthy controls, over a 1-year period.
- To evaluate the incidence of SD and PV in patients with acne vulgaris starting systemic tetracyclines or macrolides compared to acne patients managed without systemic treatments (tetracyclines, macrolides, isotretinoin) over a 1-year period.

Methods

- Retrospective cohort study using de-identified data from the TriNetX US-Collaborative Network which includes over 70 healthcare organizations.
- Patients were identified through ICD-10-CM codes and were eligible if they were aged 12-25 without a history of immunosuppression and prior history of PV/SD
- The following analyses were performed:
  1. Acne patients managed without systemic treatments (tetracyclines, macrolides, isotretinoin) compared healthy controls (non-acne patients) with no exposure to systemic acne treatments
  2. Acne patients managed with systemic tetracyclines, or macrolides compared to acne patients managed without systemic treatments (tetracyclines, macrolides, isotretinoin)
- Patients were further excluded if they were on other systemic treatment different than the drug being analyzed within the last three months prior to initiation or throughout the study period
- Cohorts were matched 1:1 by demographics, diabetes mellitus, obesity, smoking, alcohol, socioeconomic status, topical antifungals and topical antiacne treatments
- The primary outcome was the incidence of PV/SD over a 1-year period, assessed by Odds Ratio (ORs) and 95% confidence intervals (CIs)

Results

Seborrheic dermatitis (Table 1.):

- At 1-year, acne patients were more likely to develop SD compared to healthy controls (379 vs. 90; ORs: 4.27; 3.40-5.38)
- Patients treated with tetracyclines were 83% more likely to develop SD than those managed without systemic medications (95 vs. 52; ORs: 1.83; 1.30-2.57)
- Patients treated with macrolides were 70% more likely to develop SD than those managed without systemic medications (116 vs. 69; ORs: 1.70; 1.26-2.29)

Pityriasis Versicolor (Table 2.):

- At 1-year, acne patients were more likely to PV compared to healthy controls (128 vs. 77; ORs: 1.67; 1.26-2.21)
- Patients treated with tetracyclines were 66% more likely to develop PV than those managed without systemic treatments (48 vs. 29; ORs: 1.66; 1.04-2.63)
- No association was found between macrolides and PV

Analysis	Cohort	SD Incidence, n (%)	Odds Ratios (95% CIs)
Overall	Acne without systemic treatment (n=146,210)	379 (0.26)	4.27 (3.40-5.38)
	Healthy Controls (n=146,210)	90 (0.06)	
Tetracyclines	Tetracyclines (n=30,343)	95 (0.31)	1.83 (1.30-2.57)
	Acne without systemic treatment (n=30,343)	52 (0.17)	
Macrolides	Macrolides (n=34,652)	116 (0.33)	1.70 (1.26-2.29)
	Acne without systemic treatment (n=34,652)	69 (0.20)	
Abbreviations: SD, seborrheic dermatitis; n, number of patients in cohort; CIs, confidence interval			

Table 1: Incidence and likelihood of seborrheic dermatitis after 1 year

Results (continued)

Analysis	Cohorts	PV incidence, n (%)	Odds Ratios (95% CIs)
Overall	Acne without systemic treatment (n=144,344)	128 (0.09)	1.67 (1.26-2.21)
	Healthy Controls (n=144,344)	77 (0.05)	
Tetracyclines	Tetracyclines (n=30,944)	48 (0.16)	1.66 (1.04-2.63)
	Acne without systemic treatment (n=30,944)	29 (0.09)	
Macrolides	Macrolides (n=34,926)	42 (0.12)	1.20 (0.77-1.89)
	Acne without systemic treatment (n=34,926)	35 (0.10)	
Abbreviations: PV, pityriasis versicolor; n, number of patients in cohort; CIs, confidence interval			

Table 2 : Incidence and likelihood of pityriasis versicolor after 1 year.

Conclusion and Limitations

- Patients with acne were more likely to develop SD and PV compared to healthy controls after 1 year of diagnosis. Systemic treatments (tetracyclines and macrolides) were associated with incident SD, while only tetracyclines were associated with new-onset PV. Together, these findings suggest that acne patients are at increased risk of developing SD and PV and highlight the need for careful monitoring for these comorbid dermatologic conditions, particularly when systemic antibiotics are prescribed.
- A key limitation of this study is the inability to control for over-the-counter antifungal use, which may confound results. Other potential confounding factors include lifestyle, diet, and acne severity, which were not fully captured in the dataset. Additionally, although propensity score matching was implemented to reduce bias, residual confounding may still exist. The observational and retrospective nature of the study also limits causal inference, and there may be variability in diagnosis coding or documentation across different sites. Finally, the findings may not be generalizable to populations outside the study cohort or to patients with milder forms of acne not presenting to healthcare settings.

Disclosures

The authors declare no conflicts of interest or disclosures related to this study.

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