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LETTER

Examining Constraints: A Critical Appraisal of Autoimmune Diseases and Facial Aging Study [Letter]

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Dear editor

We thoroughly reviewed the study titled "Genetically Proxied Autoimmune Diseases and the Risk of Facial Aging" by Zhang et al[1] in the esteemed journal "Clinical, Cosmetic and Investigational Dermatology". The study offers valuable insights into the potential causal relationship between autoimmune diseases and facial skin aging through Mendelian randomization (MR) analyses. However, several limitations diminish the generalizability and reliability of the findings.

Firstly, the study relies heavily on publicly available summary data from genome-wide association studies (GWASs) and questionnaire-based assessments from the UK Biobank raises concerns about data quality and completeness. Without detailed individual-level data, the study lacks the ability to adequately control for various confounding variables that may influence facial aging. These variables include socioeconomic status, environmental factors like pollution and sunlight exposure, lifestyle parameters such as skincare routines, tobacco use, and dietary habits.[2] Moreover, focusing solely on 18 autoimmune diseases overlooks potential contributions from other autoimmune conditions, leading to an incomplete understanding of the overall relationship.

Secondly, subjective perception of facial aging through questionnaires introduces bias due to variations among individuals. Employing standardised objective measures, such as validated scales or advanced imaging technologies like 3D facial analysis,[3] could mitigate this bias and enhance the reliability of assessments.

While attempts were made to adjust for confounding factors like smoking, alcohol consumption, and body mass index (BMI) in multivariable Mendelian randomization (MVMR) analyses, not all potential confounders were adequately addressed. Specific treatments for autoimmune diseases like psoriasis, eczema, and lupus like topical steroids, were not thoroughly addressed in the study, despite their known association with facial aging through skin thinning.[4] Therefore, their exclusion limits the study's ability to draw accurate conclusions regarding the impact of autoimmune diseases on facial ageing.

Furthermore, Mendelian randomization[5] relies on assumptions like the absence of pleiotropy and linkage disequilibrium, which can bias results. Despite conducting sensitivity analyses, the complex nature of autoimmune diseases still poses concerns regarding potential violations of these assumptions. This uncertainty undermines the causal inference regarding the relationship between autoimmune diseases and facial aging.

Disclosure

The authors report no conflicts of interest in this communication.

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