The influence of air pollution on atopic dermatitis control in patients living in Lodz and surrounding urban areas

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The aim of this study is to evaluate the clinical impact on the severity of air pollution on the course and symptom control of atopic dermatitis in patients living in Lodz and surrounding urban areas
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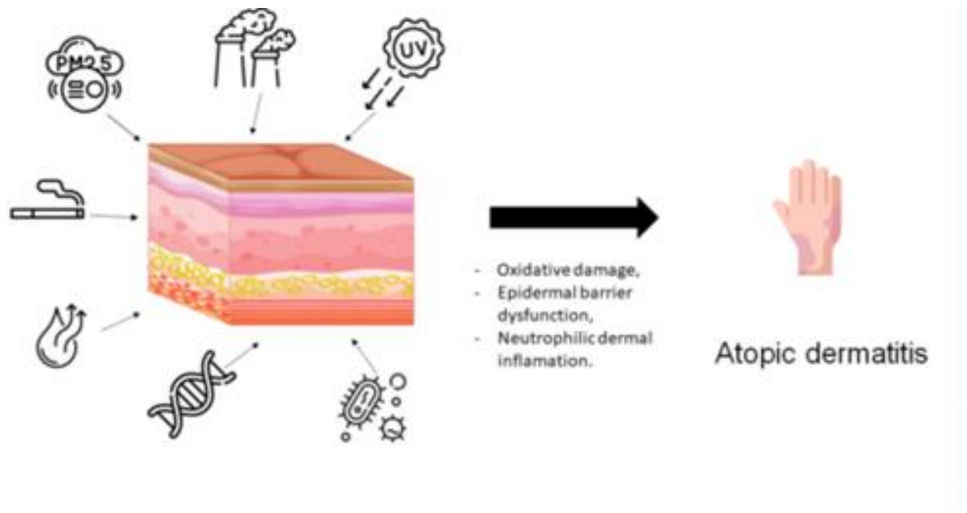
INTRODUCTION

Human health is adversely affected by air pollution, which is a serious environmental challenge. Almost everyone (90% of the world's population) experiences pollution daily. In 2019, air pollution was identified by the World Health Organization as the greatest environmental threat to human health, responsible for the premature deaths of more than 7 million people each year. The increase in air pollution over the years has had a major impact on human skin. Atopic dermatitis (AD) is a multifactorial, heterogeneous disease that arises from the interaction between environmental and genetic factors.
Over the past three decades, there has been an increase in the number of atopic dermatitis patients in urban and more industrialized regions relative to agricultural areas. Residents of cities, and therefore more polluted environments, are more often ill.



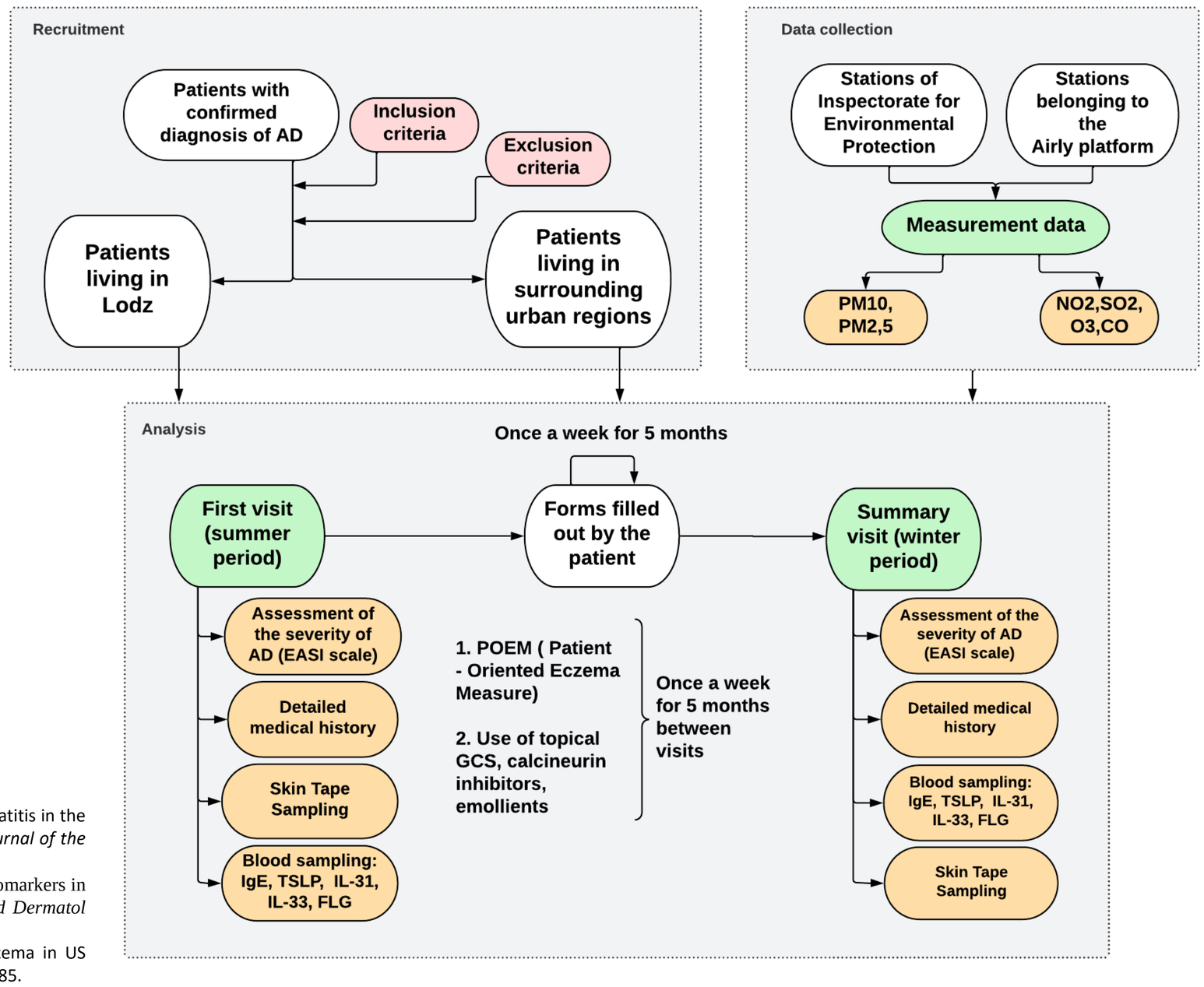
METHODOLOGY

The study will be conducted in a group of approximately 130 patients over the age of one with a confirmed diagnosis of atopic dermatitis according to the Hannifin and Rajka criteria. Data from visits and a questionnaire filled out regularly by patients will be collected and then compared with information on air pollution according to where patients live.

The hypothesis of the study takes into consideration that patients living in a more polluted area:

- report more frequent episodes of exacerbations,
- observing a greater extent and severity of skin lesions,
- are more likely to use emollients,
- have higher levels of pro-inflammatory factors

compared to the group living in a less polluted area



References

1. Park SK, Kim JS, Seo HM. Exposure to air pollution and incidence of atopic dermatitis in the general population: A national population-based retrospective cohort study. *Journal of the American Academy of Dermatology.* 2021.
2. Nygaard U, Hvid M, Johansen C, et al. TSLP, IL-31, IL-33 and sST2 are new biomarkers in endophenotypic profiling of adult and childhood atopic dermatitis. *J Eur Acad Dermatol Venereol*. 2016;30(11):1930-1938. doi:10.1111/jdv.13679
3. Kathuria P, Silverberg JI. Association of pollution and climate with atopic eczema in US children. Pediatr Allergy Immunol. 2016 and doi:10.1111/pai.12543, 27(5):478-485.
4. Salimian J, Salehi Z, Ahmadi A, et al. Atopic dermatitis: molecular, cellular, and clinical aspects. *Mol Biol Rep*. 2022;49(4):3333-3348. doi:10.1007/s11033-021-07081-7