Impact of secondary exposure to pigeon antigens from residential small-scale animal husbandry: a hypersensitivity pneumonitis case

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ABSTRACT:

Introduction: Hypersensitivity pneumonitis (HP) triggered by avian antigens is one of the most prevalent forms of HP, with pigeon antigens being the most common cause. Although the health effects associated with exposure to pigeon antigens has been well documented among pigeon breeders, this is not the case for family members and individuals living near breeding facilities. This case explores this under-reported aspect associated with pigeon breeding in or around residential dwellings.

Methods: A 56-year-old housewife who was referred to an academic hospital's respiratory outpatient department with a primary complaint of progressive worsening dyspnoea and intermittent dry cough, which she had experienced for six years. Comprehensive evaluations performed included physical examination, chest x-rays (CXR), high-resolution computed tomography (HRCT), and lung function testing. The patient's blood was analysed for immunoglobulin G (sIgG) to avian antigens due to the patient's husband breeding birds at their residence for racing purposes.

Results and discussion: The clinical results suggested HP diagnosis, which was supported by the laboratory findings of elevated sIgG antibodies to pigeon mix Ge 91 (pigeon serum proteins, feathers, and droppings) and Ge 93 (pigeon serum proteins). These results assisted in the confirmation of the diagnosis of HP due to secondary pigeon exposure.

Conclusion: These findings emphasises the need to establish national reference ranges for IgG against common HP antigens, in order to improve the use of sIgG antigen testing in the diagnostic framework. Furthermore, this case highlights the significance of monitoring exposures within the growing cottage industry in South Africa, in order to reduce the exposure risk to humans, animals and the environment.