

## Global Scenario of Allergies

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There has been a drastic upsurge in the prevalence of allergic diseases in recent years. Allergies are overall increasing often in industrialized countries including Germany.<sup>1</sup> Globally more than one billion people are suffering from some form of allergic disease which widely affects the health and economics.<sup>2</sup> This prevalence is expected to reach four billion by the year 2050.<sup>2</sup> The *White Book on Allergy* update 2013 from the World Allergy Organization (WAO) has summarized the global scenario of allergic illnesses, the burden of its morbidity, risk factors, impact on quality of life, their socio-economic consequences, recommended treatment policies and future treatments.<sup>3</sup> The major culprit seems to be the changing pattern of living, which alters the immune regulation system. It is a collective result of genetic and environmental factors which sets up immune dysregulation. Changing dietary pattern, living conditions, increasing pollution, global warming, lack of exercise, obesity, multi-organ involvement and overuse of antibiotics could further exaggerate the scenario. The prevalence now seems to be more among adolescent, young population and children which could result in a profound prevalence in the upcoming future.<sup>4</sup>

The burden of allergic diseases seems to incline also in developing nations. Most often in the developing nations the problem can be obscure because of the lack of definitive evaluation and tests. The theory of “Hygiene Hypothesis” could be a protective factor among the population.<sup>5</sup> The theory can explain the relatively low occurrence of allergies in developing countries and a rising trend of in developed nations. However among the sufferers, poly-sensitization could result in compound clinical manifestations. House dust mites have been strongly implicated as a common sensitizer especially for allergic respiratory diseases.<sup>6</sup> More than 80% of patients with allergic asthma are sensitive to a species of house dust mite, *Dermatophagoides pteronyssinus* as determined by skin tests and specific IgE measurements.<sup>7</sup> In developing nations rising prevalence could be due to early sensitization with house dust mites or cross sensitivity to insects as cockroaches. A lot of other exogenous triggers could be resulting allergic disorders. A special mention can be of insect sting. About 1% of emergency doctors cases in some regions in Germany are caused to insect stings.<sup>8</sup> Fatal and severe allergic reactions to insect sting could also be common in country like Nepal. However, there could be many cases, which are not reported.

The morbidity and quality of life of patients with allergies is often poor. Avoidance of allergen or desensitization technique is the only methods for prevention of recurrence of symptoms. Hence, diagnosis of the triggering allergen is very essential. Diagnosis of allergy is done by anamnesis, laboratory tests, skin tests and provocation tests. They are simple tools which if implemented in a proper method could diagnose the exact etiology. A need of these tools at various levels even in developing nations has been felt.

The complete treatment of allergy is always challenging. The first step to control allergy is to avoid causative allergens or suspected allergens, which is often not so easy approach. Secondly, various anti-allergic drugs like steroids, antihistamines and monoclonal antibodies can be used to control allergic reaction but these are also only providing temporary relief. Most importantly, immunotherapy has shown the promising treatment for allergies but cost is so high that its use in regular treatment approach is limited.

Allergologists have been a recognized special professional all over the world from several years and have been a part of various departments like, dermatology, pulmonology, paediatrics or otorhinolaryngology. Therefore, allergology training among these professionals is a current need in developing countries as well. The allergologist can be very helpful in diagnostic as well as treatment of various allergies. Moreover, they can contribute in improving the quality of life of the people who suffer from allergic reactions.

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## REFERENCES

1. Matricardi PM. The Allergy Epidemic, in: Global Atlas of Allergy, Akdis C, Agache I, published by the European Academy of Allergy and Clinical Immunology 2014, 112-3.
2. Akdis CA, Agache I, editors. Global Atlas of Allergy: European Academy of Allergy and Clinical Immunology; 2014. Available at: <http://www.eaaci.org/globalatlas/GlobalAtlasAllergy.pdf>. Accessed January 2018.
3. Pawankar R, Canonica GW, ST Holgate ST, Lockey RF, Blaiss M. WAO White Book on Allergy: Update 2013. 2013. Available at: <http://www.worldallergy.org/UserFiles/file/WhiteBook2-2013-v8.pdf>. Accessed January 2018.
4. Larsen JN, Broge L, Jacobi H. Allergy immunotherapy: the future of allergy treatment. *Drug Discov Today*. 2016;21:26–37.
5. Patki A. Eat dirt and avoid atopy: The hygiene hypothesis revisited. *Indian J Dermatol*. 2007;73:2–4.
6. Yu SJ, Liao EC, Tsai JJ. House dust mite allergy: environment evaluation and disease prevention. *Asia Pac Allergy*. 2014;4(4):241-52.
7. Kam KL, Hsieh KH. Comparison of three in vitro assays for serum IgE with skin testing in asthmatic children. *Ann Allergy*. 1994;73:329–336.
8. Sieber W, Prieschenk C, Brunner M. Incidence of anaphylactic reactions and seasonal accumulation in emergency medical service 2010/ 2011 in Bavaria. *Allergo J*. 2017; 26(3):53.