Patients living in urban areas require more pharmacotherapy and have lower remission of symptoms for asthma and rhinitis than patients in rural location

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Background: Numerous epidemiological studies have shown that children who grow up on traditional farms are protected from asthma, rhinitis and allergic sensitization. However, less is known about if the environment influences the pharmacotherapy in these patients.

Objective: To compare the treatment of asthmatic and rhinitis children from urban and rural areas in Medellín, Colombia.

Methods: For 1 year, we follow up a group of children (6 to 14 years) with diagnostic of asthma living for more than 5 years in urban or rural area. A questionnaire with sociodemographic characteristics, pharmacotherapy treatments, was obtained each 3-months. Atopy evaluation, spirometry and ACT, ARSQ were done at the beginning and one year.

Results: 382 (86.4 %) patients completed the follow-up (rural n = 134, urban n = 248). Atopy (p < 0.07) and poli-sensitization (p < 0.08) was a little higher in urban than rural area, but it was not statistically significant. Dermatophagoides spp. (83 %) were the most important allergenic source sensitzers followed by dog (28 %) and insects (24 %). Patients in urban area had worse respiratory control according to ACT and ARSQ. We did not observe that poverty/unhygienic indicators were risk factors for a higher severity of asthma or rhinitis, but it was associated with higher levels of specific IgE among patients from urban area and poli-sensitization. Rural children require less pharmacotherapy for clinical control than urban children (p = 0.01) and more patients in the rural group could suspended pharmacotherapy for rhinitis (18 % vs 8 %, p = 0.03) and asthma (23 % vs 12 %, p = 0.01). Also, patients in rural location required less salbutamol (p = 0.01), visit to emergency department (p < 0.01) and have a less number of patients with FEV₁ < 80 % (p = 0.05).

Conclusions: Patients in urban area require more pharmacotherapy and have less clinical response than rural children for asthma and rhinitis. Some environmental factors could influence these results.

Keywords: Asthma; Rhinitis; Allergic sensitization