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Joaquín Sastre, Manuela García del Potro, Erika Aguado, et al.

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LETTER

Occupational asthma due to 5-aminosalicylic acid

5-Aminosalicylic acid (5-ASA) is an anti-inflammatory drug with a structural resemblance to phenacetin and is widely used to treat inflammatory bowel diseases. 5-ASA is the active constituent of sulphasalazine and sulphapyridine is its transport molecule. Some studies suggest that the serious adverse effects of the drug are in many cases due to sulphapyridine; however, at least in some patients, the adverse effects of sulphasalazine are attributable to 5-ASA itself.^{1 2} Pharmaceutical development has concentrated on delivering 5-ASA to the mucosa of the small intestine and colon using other inert carriers such as mesalazine. Blood dyscrasias, hepatitis, pancreatitis, pericarditis, pneumonitis and serious skin reactions have been reported in patients treated with sulphasalazine. Allergy to ASA and other salicylates, such as aspirin, has been reported.³ We report a case of occupational asthma due to 5-ASA.

A 56-year-old man complained of cough, dyspnea and wheezing 1 month after beginning work manufacturing a drug containing 5-ASA, in spite of taking measures to protect his skin and respiratory system. Symptoms typically appeared 6 h after the start of shifts. Symptoms worsened with the passing of time. The patient was treated with salbutamol as needed. For the last 30 years he has worked for a pharmaceutical company manufacturing various drugs. The man was diagnosed with occupational asthma caused by amoxicillin 29 years ago and with nasal polyposis 7 years ago. He

currently works in the manufacture of levofloxacin and tolerates oral amoxicillin and ibuprofen. The patient was evaluated 6 months after he had discontinued his contact with 5-ASA. Physical examination, blood tests and spirometry results were normal. Skin prick tests with common inhalants showed positive results to grass pollen, with a negative reaction to 5-ASA (10 mg/ml). Methacholine PC₂₀ was >16 mg/ml, fraction of exhaled nitric oxide (FE_{NO}) level was 32 ppb, and sputum induced by hypertonic saline inhalation and processed as previously described,⁴ showed no eosinophils. After signed informed consent was provided by the patient, an exposure challenge was carried out with a placebo (lactose as sham exposure) in a 7 m³ chamber for 30 min. The results showed no changes in FEV₁ over 24 h, as measured hourly with a computerised flow metre (Amos, Jaeger, Germany) while respecting sleep time. On visit 2, the patient was exposed to 5-ASA (5% in lactose) in the chamber at a mean concentration of 2.65 mg/m³ for a total of 30 min. A late response, with a maximum fall in FEV₁ of 16%, was elicited 9 h after the challenge. At 24 h after the challenge, methacholine PC₂₀ level was 10 mg/ml, FE_{NO} level was 53 ppb and induced sputum showed 65% eosinophils.

The above results demonstrate that 5-ASA inhalation was able to induce an eosinophilic asthmatic reaction and, while the underlying mechanism causing this event is still unknown, it appears to be similar to that of other low-molecular-weight agents causing immunologic occupational asthma. To our knowledge, this is the first report of occupational asthma due to 5-aminosalicylic acid.

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Joaquín Sastre,^{1,2} Manuela García del Potro,¹ Erika Aguado,¹ Mar Fernández-Nieto^{1,2}

¹Department of Allergy, Fundación Jiménez Díaz-Capio, Madrid, Spain; ²CIBER de Enfermedades Respiratorias (CIBERES), Madrid, Spain

Correspondence to Joaquín Sastre, Department of Allergy, Fundación Jiménez Díaz, Av. Reyes Católicos 2, 28040 Madrid, Spain; jsastre@fjd.es

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REFERENCES

1. **Ransford RAJ**, Langmen MJS. Sulphasalazine and mesalazine: serious adverse reactions re-evaluated on the basis of suspected adverse reaction reports to the Committee on Safety of Medicines. *Gut* 2002;**51**:536–9.
2. **Baker DE**, Kane S. The short- and long-term safety of 5-aminosalicylate products in the treatment of ulcerative colitis. *Rev Gastroenterol Disord* 2004;**4**:86–91.
3. **Vázquez Fuertes L**, Martínez-Cócera C, Robledo Echarren T, *et al*. Induction of tolerance in hypersensitivity to mesalazine (5-ASA). *An Med Interna* 2005;**22**:586–8.
4. **Fernández-Nieto M**, Sastre B, Sastre J, *et al*. Changes in sputum eicosanoids and inflammatory markers after inhalation challenges with occupational agents. *Chest* 2009;**136**:1308–15.