Immediate reaction to clarithromycin

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SUMMARY

We present the case of bronchospastic reaction to clarithromycin had during a drug challenge test.

Personal allergic history was negative for respiratory allergies and positive for adverse drug reactions to general and regional anesthesia and to ceftriaxone.

After the administration of 1/4 of therapeutic dose of clarithromycin the patient showed dyspnea, cough and bronchospasm in all the lung fields.

The positivity of the test was confirmed by the negativity to the administration of placebo.

The quickness and the clinical characteristic of the adverse reaction suggest a pathogenic mechanism of immediate-type hypersensitivity.

On reviewing the literature we have found no reports of bronchospastic reaction to clarithromycin.

Macrolides are a class of antibiotics mainly used in the last years in place of β-lactams because of a broad spectrum of action and a low allergic power. In fact, there are few reports on allergic reactions to these molecules.

Clarithromycin is one of the latest macrolides, characterised by the presence of a 14-carbon-atom lactone ring as erythromycin, active on a wide spectrum of pathogens.

Key words: Clarithromycin. Macrolides. Bronchospasm. Challenge test. Drug allergy.

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CLINICAL CASE

We report the case of a 44 year-old woman who came to our Department for suspected adverse drug reactions.

Personal allergic history was positive for contact dermatitis (nickel) and food adverse reaction (to cacao and cod-fish, both resulted positive to specific prick test) and negative for respiratory allergies.

Moreover the patient referred numerous adverse drug reactions, initiated 15 years ago with an anaphylactic shock during general anesthetic induction, followed by an episode of urticaria arisen during regional anesthesia and, lastly, by another episode of urticaria in consequence of administration of ceftriaxone. Both the episodes of urticaria were treated by the administration of methylprednisolone i.m. and ended in the course of two weeks.

The patient, affected by respiratory infections and having no safe antibiotic to use, underwent a challenge test with clarithromycin beginning from 1/16 of the therapeutic dose.

After a few minutes from the administration of this dose, the patient showed lacrimation, ocular itching and drowsiness that ended spontaneously in the course of an hour.

After one hour from the cessation of symptoms, 1/8 of therapeutic dose was administered.

A few minutes later, the patient showed the same symptoms as before that also, spontaneously ended in a short time.

To dispel doubts to a possible psychologic nature of these reactions, a dose of placebo was administered without the patient showing any adverse reaction.

Then the challenge was resumed by administering 1/4 of therapeutic dose of clarithromycin. Immediately the patient showed nasal itching, conjunctival hyperaemia, sneezing, dyspnea, cough and bronchospasm in all the lung fields.

Moreover the patient referred difficult in swallowing, so, she was treated with betamethasone 4 mg i.v., chlorpheniramine i.m. and methylprednisolone 40 mg in physiological solution, with a total remission of the symptomatology in the course of three hours.

DISCUSSION

Macrolides are considered antibiotics with a very low risk of sensitisation, in fact allergy to macrolides has been calculated from 0.4 to 3% of treatment (1).

Rarely are there observations on severe reactions, as anaphylactic shock, connected to macrolides such as erythromycin intake (2).

Clarithromycin is a macrolide antimicrobial agent with an optimal tolerability profile, demonstrated on the basis of adverse reactions and abnormal values seen in phase I, II and III international clinical trials conducted in adults (3).

Comparison between clarithromycin and the other macrolides used in controlled trials showed that adverse events were reported less frequently with clarithromycin than with other macrolides (4).

The few cases of adverse reactions to clarithromycin reported in literature consisted in leukocytoclastic vasculitis (5-6), Henoch-Schönlein (7) and macupapular rash type hypersensitivity reaction (8).

In our case the quickness and the clinical characteristics of the adverse reaction suggest either a causative role of clarithromycin or a pathogenic mechanism of immediate-type hypersensitivity.

In conclusion we have presented the first case of a bronchospastic reaction to clarithromycin, presumably type I hypersensitivity.

RESUMEN

Presentamos un caso de reacción broncospástica a claritromicina que tuvo lugar durante la prueba de provocación con el fármaco.

La historia alérgica personal fue negativa para alergias respiratorias y positiva para reacciones farmacológicas adversas a la anestesia general y regional y a la ceftriaxona.

Después de la administración de un cuarto de la dosis terapéutica de claritromicina, el paciente presentó disnea, tos y broncospasmo en todos los campos pulmonares.

La prueba se confirmó mediante la negatividad de la respuesta frente a la administración de placebo.

La rapidez y características clínicas de la reacción adversa sugieren un mecanismo patogénico de hipersensibilidad de tipo inmediato.

En la revisión de los estudios publicados no identificamos ninguna descripción de reacción broncospástica a claritromicina.

Palabras clave: Claritromicina. Macrólidos. Broncospasmo. Test de provocación. Alergia a medicamentos.

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