

# Anaphylactic shock after intra-articular injection of carboxymethylcellulose

J. Montoro, A. Valero, A. Elices, N. Rubira, E. Serra-Baldrich, P. Amat and A. Malet

Al-Iergo Centre. Barcelona. Spain.

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## SUMMARY

**Background:** sodium carboxymethylcellulose (SCMC) is the sodium salt of a polycarboxymethyl ether of cellulose. SCMC is widely used in pharmaceutical and food industries. We present the case of a 47-year-old man who suffered an anaphylactic shock after an intra-articular injection of Trigon depot®.

**Methods and results:** prick and intradermal tests with Trigon depot® and its components (triamcinolone acetonide, Tween 80, benzylalcohol, SCMC), mepivacaine 2% and latex were performed. Challenge test with mepivacaine 2% was also realized.

Results showed a positive intradermal test to Trigon depot® and carboxymethylcellulose, with negative results to the rest (including challenge test to mepivacaine 2%).

**Conclusions:** our results support the diagnosis of anaphylactic shock after intra-articular injection of carboxymethylcellulose and we consider necessary to emphasize that excipients must be taken into account as a potential source of adverse reactions to drugs.

**Key words:** Carboxymethylcellulose. Triamcinolone acetonide. Anaphylaxis. Drug allergy.

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## INTRODUCTION

At present several cases of adverse reactions to systemic corticosteroids have been described (1-5). Some of these reactions are produced for excipients and not for the corticosteroid.

Sodium carboxymethylcellulose (SCMC) is the sodium salt of a polycarboxymethyl ether of cellulose. The degree of polymerisation affects the viscosity of solution. SCMC is a white to cream-coloured, hygroscopic powder or granules. It's easily dispersed in water forming colloidal solutions and insoluble in alcohol and ether. SCMC has a variety of uses: as a suspending and emulsifying agent, preparation of gels, mechanical protection of oral and perioral lesions, sialagogue in dry mouth, surgical application, mechanical laxative and as a food additive (E-466).

## CASE REPORT

Because of a recurrent arthritis in his left shoulder, a 47-year-old man, without personal or family history of atopy, received an intra-articular injection of triamcinolone acetonide (Trigon depot® 40 mg/ml) and mepivacaine 2%. Within 15 min, he experienced generalized pruritus, urticaria, angioedema, dyspnea, hoarseness, dizziness and loss of consciousness.

Emergency treatment brought to improvement and he was kept under observation for 24 h.

In the last 2 years, 6 previous intra-articular infiltrations were well tolerated.

## MATERIAL AND METHODS

Prick and intradermal tests with Trigon depot®, its constituents (triamcinolone acetonide, SCMC, Tween 80, benzylalcohol), mepivacaine 2% and latex were performed.

Challenge test with mepivacaine was also realized.

**Table I**  
**Results of the allergological study**

|                     | Prick test     | Intraderm.      | Challen. SC |
|---------------------|----------------|-----------------|-------------|
| Trigon depot®       | Neg. 40 mg/ml  | 11 x 12:4 mg/ml |             |
| Mepivacaine         | Neg. 2%        |                 | Neg. 2 ml.  |
| Triamcinolone acet. | Neg. 40 mg/ml  | Neg. 40 mg/ml   |             |
| Benzylalcohol       | Neg. 10 mg/ml  |                 |             |
| Carboxymethylcel.   | Neg. 8 mg/ml   | 9 x 8:8 mg/ml   |             |
| Tween 80            | Neg. 0,4 mg/ml |                 |             |
| Latex               | Neg.           |                 |             |
| Saline solution     | Neg.           | Neg.            |             |
| Histamine           | 6 x 5:0,1%     | 12 x 14:0,01%   |             |

## RESULTS

Results are exposed in table I.

Positive tests are expressed in millimeters.

Due to technical difficulties it might not be possible to study specific IgE to SMCM.

## DISCUSSION

SCMC is widely used, however few adverse reactions have been described in the literature. The adverse reactions are related to parenteral administration (6-8), because SMCM does not present oral absorption, although one clinical case about it has been published (9).

Perhaps the contrast established between few adverse reactions and widely use, is due to a lack of suspicion in excipients as a potential source of allergic reactions. In conclusion, our results strongly support the diagnosis of anaphylactic shock after intra-articular administration of carboxymethylcellulose. It's necessary to emphasize that excipients must be taken into account in the case of adverse reactions to drugs.

## RESUMEN

**Introducción:** la carboximetilcelulosa sódica (SCMC) es la sal sódica de un éter policarboximetílico de la celulosa.

SCMC es un producto ampliamente utilizado en industria alimentaria y farmacéutica.

Presentamos el caso de un varón de 47 años que sufrió un shock anafiláctico tras recibir una inyección intraarticular de Trigon depot®.

**Métodos y resultados:** se realizaron test cutáneos (prick e intradermoreacción) con Trigon depot® y sus componentes (triamcinolona acetónido, Tween 80, alcohol benzílico, SCMC), mepivacaína 2% y látex.

Se realizó provocación con mepivacaína 2%.

Los resultados de los tests cutáneos mostraron positividad de forma exclusiva al Trigon depot® y a la carboximetilcelulosa, con resultado negativo para el resto del estudio (incluyendo la provocación con mepivacaína 2%).

**Conclusiones:** nuestros resultados sugieren el diagnóstico de shock anafiláctico tras la administración intraarticular de carboximetilcelulosa. Es importante destacar la importancia de tener en cuenta los excipientes como causa de reacciones adversas a fármacos.

**Palabras clave:** Carboximetilcelulosa. Triamcinolona acetónido. Anafilaxis. Alergia medicamentosa.

### Correspondence:

Javier Montoro Lacomba  
C/ Amparo Guillén, 4 - 2.ª  
46011 Valencia  
E-mail: jmontorol@meditex.es

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