Immune response to Pelargonium sidoides extract (Eps®7630) in serum and mucosa in athletes after exhaustive exercise

Luiz A Luna Jr, Andre LL Bachi, Ronni M Novaes e Britto, Ricardo G Eid, Vinicius M Suguri, Pedro W Oliveira, Luiz C Gregorio, Mauro Vaisberg
Department of Internal Medicine, Department of Immunology, Universidade Federal de São Paulo, São Paulo, Brazil

ABSTRACT

Objectives: High-intensity exercises may compromise the immune response as revealed mainly by changes in serum immunoglobulin A (IgA) and cytokine profiles. The aim of the present study is to evaluate the effect of Pelargonium sidoides extract (Eps®7630) on serum and nasal immune response in athletes submitted to an intense running session.

Methods: Thirty-five volunteer male marathon runners (mean age 40 ± 7 years, range 26-50) were recruited into this double-blind study. The protocol consisted of ingestion of Eps®7630 or placebo (3x30 mg) after the 20 m disposal of a solution of IgG of extract/100ml in solution, for 28 consecutive days. All subjects were submitted to a high-intensity running session (Marathon) (~85% of VO2max) after the 20 m disposal of a solution of IgG of extract/100ml in solution. Fasting blood, saliva and upper respiratory tract cell samples were collected before treatment started and 48 hours after the treatment.

RESULTS

The mean distance run (A) and mean running time (B) did not differ significantly between athletes of placebo or Eps®7630 groups (Chart 1).

Methods:

Thirty-five volunteer male marathon runners were submitted to an intense running session. Serum and nasal immune response were evaluated before and after the intense running session.

INTRODUCTION

Exhaustive exercise can impair the immune response. This increased risk for upper respiratory tract infections (URTIs) in athletes performing exercise endurance [1]. Hypotheses to explain the increased incidence of URTIs among athletes after severe exertion include the "open window" theory [2], but the lack of control in studies with humans, such as previous infections, probably accounts for the apparently high incidence of URTIs which has not yet been clarified [3]. The extract of Pelargonium sidoides (Eps®7630) is a plant species with anti-infective properties that are used in different cultures to treat different diseases, and is also used for the treatment of acute or chronic URTs. The objective of this study was to evaluate the possible immunomodulatory effect of Eps®7630 after a high-intensity running session.

METHODS AND MATERIALS

Thirty-five volunteer male marathon runners (mean age 40 ± 7 years, range 26-50) were recruited into this double-blind study. The protocol consisted of ingestion of Eps®7630 or placebo (3x30 mg) after the 20 m disposal of a solution of IgG of extract/100ml in solution, for 28 consecutive days. All subjects were submitted to a high-intensity running session (Marathon) (~85% of VO2max) after the 20 m disposal of a solution of IgG of extract/100ml in solution. Fasting blood, saliva and upper respiratory tract cell samples were collected before treatment started and 48 hours after the treatment.

CONCLUSIONS

We propose that Eps®7630 acts as a modulator of upper respiratory tract-associated immunological responses in athletes submitted to heavy exercise by increasing production of salivary IgA and reducing production of cytokines such as IL-6 and IL-10. This extract could modulate allergic and inflammatory responses, as well as activation and migration of immune system cells to the upper respiratory tract. Therefore, this extract could be used in athletes practicing different modalities of sports who need to confirm the effectiveness of the laboratory findings obtained in this study using Pelargonium sidoides extract (Eps®7630).

REFERENCES


DISCUSSION

In our study, Eps®7630 altered the synthesis of cytokines in the plasma and nasal epithelium, which is essential for the development of nasal defenses against invading microorganisms. This was achieved by a number of different mechanisms, as evidenced by the significant increase in the mean distance run (A) and mean running time (B) did not differ significantly between athletes of placebo or Eps®7630 groups (Chart 1).

As respiratory tract symptomatology is associated not only with infectious processes but also with inflammatory and allergic diseases, the need to understand the causes of upper respiratory tract-associated immunological responses in athletes submitted to heavy exercise by increasing... Clearly, effective protection of the athlete must take into account allergic/inflammatory and infectious processes.

RESULTS

The mean distance run (A) and mean running time (B) did not differ significantly between athletes of placebo or Eps®7630 groups (Chart 1).

Methods:

Thirty-five volunteer male marathon runners were submitted to an intense running session. Serum and nasal immune response were evaluated before and after the intense running session.

RESULTS

The mean distance run (A) and mean running time (B) did not differ significantly between athletes of placebo or Eps®7630 groups (Chart 1).

Methods:

Thirty-five volunteer male marathon runners were submitted to an intense running session. Serum and nasal immune response were evaluated before and after the intense running session.

REFERENCES