RESEARCH JOURNAL OF TRAUMA AND DISABILITY STUDIES

Volume: 3 Issue:2 | February–2024 ISSN: 2720-6866

http://journals.academiczone.net/index.php/rjtds

Use of Fluticasone Propionate in the Treatment of Allergic Rhinitis in Pregnant Women

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Abstract: Fluticasone propionate is a synthetic corticosteroid with anti-inflammatory, anti-allergic and immunosuppressive effects and is used as a spray for topical use. Increases lipomodulin production, an inhibitor of phospholipase A2, in tissues, blocks the release of arachidonic acid. Prevents marginal accumulation of neutrophils, reduces exudation and production of lymphokines from inflammatory stages, inhibits migration of macrophages, reduces the intensity of infiltration and granulation processes and the formation of a chemotaxis substance. Reduces swelling of the nasal mucosa, mucus production. Mucosiliary improves transportation.

Key words: Fluticasone propionate, corticosteroid, allergic rhinitis.

Introduction: Allergic rhinitis is a chronic inflammation of the nose, according to statistics, 25% of the population suffers from this disease. It occurs in 1 out of every 5 pregnant women. This is mainly caused by a type I hypersensitivity reaction (IgE-related reaction) to plant dust and other allergens. In addition to environmental factors, genetic predisposition also plays an important role in this disease. Rhinitis in pregnancy can also be of non-allergic origin. It is not known exactly why rhinitis occurs more often during pregnancy. Some studies show that factors such as hormones increase the likelihood of rhinitis during pregnancy, as well as the fact that the immune system is in an excited state. The etiology of the swelling of the nasal mucosa can be caused by a decrease in the α-adrenergic tone of the venous sinusoids, which leads to an increase in the accumulation of blood in the blood vessels. Another mechanism is the leakage of plasma from the vascular bed into the mucosal stroma, causing edema. There are also theories that increased estrogen levels cause nosebleeds during pregnancy. Acromegaly of pregnancy can somehow cause the nasal structure to vasomotor rhinitis. Estrogen has been suggested to affect the nasal mucosa, as there have been reports of success with nasal administration of estrogen in the treatment of atrophic rhinitis. Progesterone, which also increases during pregnancy, can cause the smooth muscles of blood vessels to relax, which can lead to local blood clots. An increase in systemic blood volume may also contribute to this. As with rhinitis of pregnancy, the only symptom of prolonged sinusitis may be a runny nose. This reduction in other symptoms may be due to a defect in the local immune response of the nose or sinuses, or to a decrease in inflammatory cell function during pregnancy.

The main symptoms of allergic rhinitis are runny or stuffy nose, itchy nose, sneezing, itchy eyes and watery eyes. Although rhinitis of pregnancy can occur at any time during pregnancy, it is most common in the first trimester. Symptoms may last at least 6 weeks. In most cases, the symptoms usually go away within 2 weeks after your baby is born.

Mouth breathing due to rhinitis of pregnancy may affect pulmonary vascular tone and oxygenation, possibly affecting fetal oxygenation. Treatment of allergic rhinitis includes: immunotherapy; antihistamines (H1 histamine blocker levocetirizine); preparation of detergents (washing with a 0.9% solution of sodium chloride in the 1st trimester, instilling a 0.01% solution of oxymetazoline in the

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2nd-3rd trimester, it constricts local blood vessels and eases breathing, evocozoline aqua spray made from plants); cell membrane stabilization (metabolism-improving agents Riboxin, nootropics piracetam); glucocorticosteroids (using Fluticasone propionate spray); and diet (abstain from red products, hot peppers, tomatoes, watermelon, red bell peppers, peanuts, citrus fruits). Allergic rhinitis carries the same risk of systemic side effects as in nonpregnant women, including increased blood pressure, palpitations, loss of appetite, tremors, and sleep disturbances. Corticosteroids are used systemically for a variety of nasal conditions, but prolonged or repeated use is generally avoided to prevent adrenal suppression or other systemic side effects. The only published article dealing with such treatment of rhinitis due to pregnancy describes Mabry's experience with "slow but persistent thickening of the nasal mucosa, usually developing towards the end of the first trimester of pregnancy" . According to him, short courses of oral corticosteroids can provide temporary relief by allowing withdrawal of nasal vasoconstrictors, and intranasal corticosteroid injections have an effect within hours, which is 4-6 weeks continues. Nasal corticosteroids are effective in allergic rhinitis , and in perennial, nonallergic rhinitis . However, pregnant patients were never included in these studies. Runny nose during pregnancy can be caused by allergic or endocrine factors and is often accompanied by the abuse of topical nasal vasoconstrictors. 32% of the surveyed pregnant women developed severe nasal symptoms. Self-treatment with nasal drops and private remedies, as well as antihistamines, and some cases of pregnancy rhinitis remain resistant to treatment. Intranasal corticosteroids provide rapid and long-term relief for these patients. In this series, excellent relief of symptoms was achieved in patients with severe nasal obstruction during pregnancy, without adverse effects on pregnancy. Fluticasone propionate is a synthetic glucocorticoid that inhibits the early and late phases of an allergic reaction. It inhibits the infiltration of inflammatory cells into the nasal mucosa in patients with allergic rhinitis, and inflammatory mediators histamine, leukotrienes, interleukin-1 (IL-1), IL-4, IL-5, IL-6, In vivo and according to in vitro studies, inhibits the production of IL-8, interferon-γ

The purpose of the study: to study the effectiveness and safety of using Fluticasone propionate in the course of chronic allergic rhinitis in ambulatory conditions for the symptomatic treatment of allergic rhinitis in pregnant women.

Materials and research methods. We examined 30 pregnant patients aged 25-35 years who received Fluticasone propionate in parallel with the main treatment for 15 days. The drug was prescribed 1 dose five times a day in the morning by spraying the nasal mucosa. When the therapeutic efficiency was felt, the number of daily sprays was reduced from the 4th day to 4 times. From the 7th day to 3 times, from the 10th day to 2 times, on the 14th day to 1 time. Evaluation of effectiveness based on clinical data is carried out 4 times on the 4th, 7th, 10th and 15th days of the study.

Obtained results and their discussion. At the end of the course of treatment with Fluticasone propionate , the antiallergic, antiexudative, antipruritic effect of the drug was shown in most of the pregnant women. As a result of the decrease in the effect of histamine on the capillaries, the permeability of the connective tissue also decreased, and it was found that there was no swelling caused by the release of plasma into the surrounding tissues. Taking Fluticasone propionate in the treatment of allergic rhinitis reduces objective and subjective symptoms, significantly eliminates the problems that bothered the patient. The obtained results show that taking Fluticasone propionate has a good anti-allergic effect, that is, it eliminates congestion and itching in the nasal mucosa, blocks the effect of histamine on smooth muscles, eliminates their spasm, capillaries reduces permeability. Increases the production of lipomodulin, an inhibitor of phospholipase A, in the tissue, blocks the release of arachidonic acid. Prevents marginal accumulation of neutrophils, reduces exudation from inflammatory stages and production of lymphokines, inhibits migration of macrophages, reduces intensity of infiltration and granulation processes and formation of chemotaxis substance.

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Conclusion: Thus, taking into account the efficacy and safety of Fluticasone propionate , it can be recommended for the symptomatic treatment of allergic rhinitis in pregnant women.

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