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Short Communication

Physiology of Hydrocortisone Treatments in Eczema and Regulatory Considerations

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DESCRIPTION

Eczema, also known as atopic dermatitis, is a chronic skin condition characterized by inflamed, itchy, and often rash-covered skin. Among the various treatments available, hydrocortisone has emerged as an option for managing eczema symptoms. It describes the physiology of hydrocortisone treatments in eczema and the regulatory considerations surrounding its use.

The physiology of hydrocortisone in eczema treatment

Inflammation suppression: Eczema is an inflammatory condition. Hydrocortisone, a synthetic corticosteroid, exerts its therapeutic effects by reducing inflammation in the skin. Inflamed skin is characterized by redness, swelling, and itching, all of which can be alleviated by hydrocortisone's anti-inflammatory properties. It acts by inhibiting the release of pro-inflammatory substances and cytokines in response to various triggers, such as allergens or irritants [1,2].

Immune system regulation: Eczema is associated with an overactive immune response, resulting in excessive inflammation. Hydrocortisone helps regulate this response by suppressing immune system activity, particularly within the skin. It hinders the production of immune cells and cytokines responsible for the inflammatory cascade. This modulation of the immune system can provide relief from the symptoms of eczema.

Skin barrier repair: Eczema is often linked to skin barrier, making the skin more susceptible to irritants and allergens. Hydrocortisone aids in repairing this barrier by promoting the synthesis of skin proteins and lipids. As the skin barrier strengthens, it becomes more resilient and less prone to inflammation and irritation [3-5].

Symptom relief: Hydrocortisone can alleviate the uncomfortable symptoms of eczema, including itching, redness, and pain. It provides quick relief, making it a valuable treatment for patients experiencing acute flare-ups. This relief can greatly improve the patient's overall quality of life.

Regulatory considerations

In many countries, hydrocortisone creams are available over the counter at lower concentrations, typically 0.5% or less. Higher-strength formulations are often available only with a prescription due to their potential for side effects. Regulatory authorities carefully monitor and control the availability of hydrocortisone to ensure patient safety.

Adverse effects: While hydrocortisone is generally safe when used as directed, it can lead to adverse effects when misused or overused. Regulatory agencies provide guidelines on the safe use of hydrocortisone, including warnings about potential side effects like skin thinning, bruising, and the development of stretch marks [6-8].

Labeling and instructions: Regulatory agencies require clear labeling and usage instructions on hydrocortisone products. Patients must be informed about the proper application, frequency, and duration of use. This information helps prevent misuse and minimizes the risk of side effects.

Testing and approval: Regulatory authorities demand rigorous testing and evaluation of hydrocortisone products to ensure their safety and efficacy. Manufacturers must submit data from clinical trials to support claims about the product's effectiveness in treating eczema. This evidence-based approach ensures that patients can trust the products they use.

International regulations: While regulatory considerations for hydrocortisone treatments in eczema may vary from one country to another, there are international standards and guidelines that provide a framework for assessing the safety and efficacy of such products. These international standards help harmonize regulations and ensure a consistent level of patient protection worldwide [9,10].

In conclusion, hydrocortisone plays a vital role in the management of eczema by addressing the underlying inflammatory

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processes, regulating the immune response, and repairing the skin barrier. However, the use of hydrocortisone in eczema treatment is subject to rigorous regulatory considerations to ensure patient safety and efficacy. These regulations encompass product availability, labeling, instructions, testing, and international standards. Patients with eczema should consult with healthcare professionals and follow the recommended guidelines when using hydrocortisone to effectively manage their condition while minimizing potential risks.

REFERENCES

1. Song MJ, Yun DH, Hong SI. An electrochemical biosensor array for rapid detection of alanine aminotransferase and aspartate aminotransferase. Biosci Biotechnol Biochem. 2009;73(3):474-478.
2. Khampha W, Yakovleva J, Isarangkul D, Wiyakrutta S, Meevootisom V, Emnéus J. Specific detection of L-glutamate in food using flow-injection analysis and enzymatic recycling of substrate. Analytica chimica acta. 2004;518(1-2):127-135.
3. Wang Z, Zhu G, Wang Y, Li M, Singh R, Zhang B, et al. Fabrication techniques and stability analysis of SMF-/MMF-based differently tapered optical fiber structures. Applied Optics. 2021; 60(7):2077-2082.
4. Wang Z, Singh R, Marques C, Jha R, Zhang B, Kumar S. Taper-in-taper fiber structure-based LSPR sensor for alanine aminotransferase detection. Optics Express. 2021; 29(26):43793-43810.
5. Wang Y, Zhu G, Li M, Singh R, Marques C, Min R, et al. Water pollutants p-cresol detection based on Au-ZnO nanoparticles modified tapered optical fiber. IEEE Trans Nanobioscience. 2021; 20(3): 377-84.
6. Wu L, Chu HS, Koh WS, Li EP. Highly sensitive graphene biosensors based on surface plasmon resonance. Opt Express. 2010; 18(14):14395-14400.
7. Xing F, Meng GX, Zhang Q, Pan LT, Wang P, Liu ZB, et al. Ultrasensitive flow sensing of a single cell using graphene-based optical sensors. Nano Lett. 2014; 14(6):3563-3569.
8. Zeng S, Baillargeat D, Ho HP, Yong KT. Nanomaterials enhanced surface plasmon resonance for biological and chemical sensing applications. Chemical Society Reviews. 2014;43(10):3426-352.
9. Zeng S, Hu S, Xia J, Anderson T, Dinh XQ, Meng XM, et al. Graphene–MoS2 hybrid nanostructures enhanced surface plasmon resonance biosensors. Sensors and Actuators B: Chemical. 2015; 207:801-810.
10. Xi S, Zhang X, Du Z, Li L, Wang B, Luan Z, et al. Laser Raman detection of authigenic carbonates from cold seeps at the Formosa Ridge and east of the Pear River Mouth Basin in the South China Sea. Journal of Asian Earth Sciences. 2018; 168:207-224.